IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Bulk Water Prices
for
State Water Corporation and
Water Administration Ministerial Corporation

from 1 October 2006 to 30 June 2010

Water - Report
September 2006

Bulk Water Prices
for
State Water Corporation and
Water Administration Ministerial Corporation

From 1 October 2006 to 30 June 2010

Report Nos 4 and 5, 2006

September 2006

ISBN 1 920987 75 4

The Tribunal members for this review are:

Dr Michael Keating AC, Chairman
Mr James Cox, Full Time Member
Ms Sibylle Krieger, Part Time Member

Inquiries regarding this review should be directed to:

Michael Seery ☎ 02 9290 8421
Nigel Rajaratnam ☎ 02 9290 8461
Brett Everett ☎ 02 9290 8423

Independent Pricing and Regulatory Tribunal of New South Wales
Level 2, 44 Market Street, Sydney NSW 2000
☎ (02) 9290 8400 Fax (02) 9290 2061
www.ipart.nsw.gov.au
ALL CORRESPONDENCE TO: PO BOX Q290, QVB POST OFFICE NSW 1230

TABLE OF CONTENTS

1 INTRODUCTION AND OVERVIEW

The Independent Pricing and Regulatory Tribunal of NSW (the Tribunal) is responsible for determining maximum prices for a range of bulk water services provided by State Water Corporation (State Water) and the Department of Natural Resources (DNR), in accordance with the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act). These services relate to the delivery of bulk water from sources managed by State Water and DNR[1] to farmers, irrigators, industrial users, town water suppliers, the Sydney Catchment Authority and Hunter Water Corporation.

The Tribunal's last determination on bulk water services was in 2005, and set prices for a one-year period. In its report on that determination, the Tribunal recognised that a one-year determination was not ideal, but considered that the information submitted by State Water and DNR[2] did not provide an adequate basis for setting a longer price path. In addition, the late receipt of DNR's submission meant the Tribunal did not have sufficient time to consider in detail the full range of issues involved in setting a longer price path.

The Tribunal indicated that for the 2006 review it expected State Water and DNR to make detailed submissions on their projected operating and capital costs for the next five years so it could consider setting a medium-term price path. It also indicated that it would consider a range of important issues that it was not able to address in the 2005 determination due to time and data constraints. These issues include:

- the basis for allocating efficient costs between users and the community
- the methodology used to calculate each agency's revenue requirement for forecast capital expenditure
- the treatment of costs attributed to the Murray-Darling Basin Commission (MDBC) and the Dumaresq-Barwon Border River Commission (DBBRC)
- the structure of prices, including the differential between high and low security entitlement charges, the discounts provided to wholesale irrigators, the balance between fixed and variable charges, and the potential for a two-part tariff for unregulated rivers
- the approach to billing customers on unregulated rivers
- the framework for funding additional projects that are specifically requested by users.[3]

The Tribunal released its draft determination on the price of bulk water services for the period 2006/07 to 2009/10 on 31 May 2006. The Tribunal invited interested parties to comment on the draft report and determination by 21 June 2006 and held a public hearing in Sydney on 30 June 2006.

---

1 The Water Administration Ministerial Corporation (WAMC) is the legal entity that is responsible for water resource management. DNR undertakes the water resource management involved in making available and providing bulk water on its behalf. Therefore, while DNR performs the WRM activities, WAMC is the legal entity that provides the services for which the Tribunal sets prices. Thus, the Tribunal's determination will formally apply to State Water and WAMC.

2 Then known as the Department of Planning, Infrastructure and Natural Resources (DIPNR).

3 Such as the Yanco Creek System Natural Resource Management Plan, which was proposed by the Yanco Creek and Tributaries Advisory Council in 2005 to enhance the provision of water in this area.

The Tribunal has considered the issues that stakeholders raised in the submissions, including:

- the level of increases in the draft determination and the impact of charges on the long term viability of irrigation in some regions
- State Water's revised proposal for operating expenditure and capital expenditure in response to allowances in the draft report and as a result of a change in its capitalisation policy and adoption of the International Financial Reporting Standards (IFRS)
- the level of user share of MDBC costs and its allocation across valleys (especially in the case of costs associated with River Murray Water and passed through in State Water's charges)
- high security premiums
- the level of rebates allowed to Irrigation Corporations and Districts (ICDs) following the removal of the wholesale discounts
- the impact on ICDs now being charged for conveyance losses
- the level of the temporary transfer fee
- concern that there were no performance measures placed on the regulated entities.

The Tribunal has made a number of changes since the draft determination. These reflect:

- the Tribunal's further consideration of the level of MDBC costs to be recovered from users and how they are distributed across valleys
- increases in State Water's operating expenditure
- the Tribunal's consideration of the impacts on irrigators in those valleys that are substantially under-recovering.

As a result, on average, State Water prices in this determination will be higher than in the draft, while DNR prices will be slightly lower. However, the changes vary across valleys compared to the draft. The key changes since the draft report are listed in section 1.2.

This report explains the Tribunal's decisions in relation to maximum prices. The determinations specify the maximum charges to apply from 1 October 2006.

1.1 Drivers of Tribunal's determination

The Tribunal examined the submissions provided by the agencies, independent analysis commissioned and undertaken by it, and information and submissions provided by other interested parties. (See Box 1.1 for more information on the review process.) It also explicitly considered the matters it is required to consider under the IPART Act, and took account of changes in the policy and regulatory environment, including the NSW Government's commitments on water pricing under the Council of Australian Governments' (COAG's) Water Reform Framework and National Water Initiative.

In making its determination for each agency, the Tribunal was strongly influenced by four significant issues that affect the regulation and prices of bulk water services in NSW. These issues include:

- **The continuing focus on cost reflective pricing,** as a result of the NSW Government's commitments under the National Water Initiative (NWI).
- **The significant increase in some State Water and DNR cost components** since the Tribunal's last major review in 2001. The agencies' operating costs have increased as a result of new activities, including those required under the newly established water sharing plans. In addition, State Water's share of costs for the Murray-Darling Basin Commission are higher than allowed for in the 2001 determination.
- **The corporatisation of, and activities undertaken by, State Water,** which have necessitated changes in the approach used to set prices and the level of costs. These changes were needed to ensure consistency with State Water's new business model, which requires a stronger emphasis on commercial decision-making, service delivery and appropriate risk management.
- **Changes to State Water's Operating Licence,** which mean the agency is required to generate a greater proportion of its revenue from usage charges from 1 July 2006. This requirement has driven significant changes in the structure of bulk water prices.

Together, these issues have driven the Tribunal's decisions to make step changes to the structure of bulk water prices in some valleys and to the level of prices in many valleys. Such changes are essential to send appropriate signals to customers and stakeholders.

1.2 Key changes since the draft determination

Following consideration of the issues raised by stakeholders on its draft report and determination, the Tribunal has made a number of changes to its draft determination.

The net effect of these changes for State Water is that the average increase for State Water will be slightly more than in the draft determination. However, the impact of this increase varies in individual valleys due to changes to the distribution of costs across valleys.

For DNR, average tariffs will be lower than in the draft determination, but the changes will vary across valleys and water sources.

1.2.1 Overall changes in State Water's prices since the draft

For State Water, the key changes in the determination include:

- The Tribunal has reduced the cap on average increases in bills. Seven of the valleys achieve full cost recovery during the determination period. The maximum increase in average bills[4] required to achieve this will be 13 per cent per annum. The remaining four valleys do not achieve cost recovery during the determination period. The Tribunal has limited the increase in average bills to 13 per cent per annum for three of these valleys. For the remaining valley, the Tribunal has increased average bills by 15 per cent per annum.

[4] These increases assume the customer holds a General Security licence and its extraction rate is at the long term average for that valley.

- Following further analysis by its consultants - Halcrow - the Tribunal has accepted a number of State Water's proposed additional operating expenses which have the effect of increasing the overall level of costs to be recovered from users.
- The Tribunal has reduced State Water's allowance for capital expenditure.
- The Tribunal has increased the weighted average cost of capital (WACC) from 6.4 per cent (real pre-tax) to 6.5 per cent (real pre-tax).
- The Tribunal has decided to pass through to users only the user share of the amount that the NSW Government has decided it would contribute to the MDBC. The Tribunal has obtained further information from the MDBC, State Water and DNR that enabled it to reduce the user share and allocate the River Murray Water costs more widely across valleys. This has resulted in a reduction in the allocation of user costs to the Murray valley but increases for other valleys (in particular the Murrumbidgee valley). The Tribunal has decided to also apply an efficiency factor to these MDBC costs.
- As a result of the Tribunal's change in approach, the Tribunal believes that an adjustment mechanism for possible changes to MDBC costs is no longer required and it has been removed from the determination.
- The Tribunal has decided to phase in the charging for conveyance licences in the case of Murrumbidgee Irrigation and Coleambally Irrigation. This gives the affected ICDs time to adjust to the new pricing arrangements.
- The Tribunal has made changes to the Temporary Transfer Fee resulting in a lower maximum charge of $150.
- The Tribunal has identified specific information that the agencies are to report to assist in understanding their performance over the price path.

1.2.2 Changes for State Water since the draft for individual valleys

The impact on prices of these changes varies across valleys. Table 1.1 shows the percentage change in average effective prices over the period from 2006/07 to 2009/10 since the draft determination.[5] This shows the relative impacts across valleys of the Tribunal's changes from the draft determination. While the table shows average impacts, the actual impact on an irrigator in a valley depends on the licence type, security and level of extraction (see section 13.3).

Prices in the Murray valley will be significantly lower than in the draft determination. Since the draft determination, the Tribunal has undertaken further work on the cost drivers for the MDBC's water businesses. As a result of this work, the Tribunal has concluded that some of the costs of these businesses should be paid for by users in other valleys.

Prices in valleys other than the Murray will need to increase faster than in the draft determination. This reflects the generally higher level of State Water's costs and also the Tribunal's decision to allocate some for the costs of the MDBC's water businesses to valleys other than the Murray. The Tribunal has adopted a revised method of allocating capital expenditure to valleys which affects the price increases for particular valleys.

---

5 The effective price was calculated using the revenue derived from entitlement charges and usage charges based on the long term average (LTA) consumption, divided by the LTA consumption. The average effective price is calculated as a simple average of the effective price in each year.

Table 1.1 Changes from draft determination in average effective prices over the determination period, by valley, State Water ($ Real 2006/07)

Valley	Draft determination average effective price ($/ML)	Final determination average effective price ($/ML)	Average change
Border	8.47	8.77	4%
Gwydir	10.59	11.76	11%
Namoi	15.28	16.83	10%
Peel	39.02	37.30	-4%
Lachlan	14.13	15.23	8%
Macquarie	10.36	11.48	11%
Murray	7.12	5.28	-26%
Murrumbidgee	4.01	4.52	12%
North Coast*	62.76	70.58	12%
Hunter*	19.42	22.89	18%
South Coast	35.70	34.12	-4%

* For North Coast and Hunter the structure of prices has changed between the draft and final determination which results in higher average prices. However, for a general security customer using 60 per cent of their allocation, bills will be lower than in the draft determination.

1.2.3 Overall changes in DNR's prices since the draft

The key changes for DNR in the determination since the draft include:

- The Tribunal adjusted DNR's proposed operating expenditure downwards to reflect an error in the draft determination.
- For reasons outlined above, the Tribunal has reduced the user share of MDBC, and allocated the costs more widely across valleys.
- The Tribunal has used the 2004/05 billing data for groundwater volumes and customer numbers.
- The Tribunal has amended charges in those valleys that were over-recovering.
- The Tribunal has introduced a minimum bill for DNR on all water sources of $60 per year.
- The Tribunal has decided to apply a lower cap on increases in individual irrigator's bill on unregulated rivers and groundwater sources (20 per cent per annum compared to 25 per cent per annum in the draft determination).
- On unregulated rivers irrigators have the option of electing to be charged on a two part tariff where they have a meter installed.
- In consideration of the impacts of the change on the affected ICDs, the Tribunal has decided to phase in the charging for conveyance licences in the case of Murrumbidgee Irrigation and Coleambally Irrigation.

1.2.4 Changes for DNR since the draft for individual valleys

The impact on prices of these changes varies across valleys and water sources. Table 1.2 shows the percentage change in the average effective prices over the period 2006/07 to 2009/10 since the draft determination for regulated rivers.[6] For unregulated rivers and ground water, the table shows the average entitlement charges. However, for these water sources average usage charges changed at the same rate as the entitlement charges so that the percentage changes in entitlement charges reflect the percentage changes in total (usage and entitlement) charges.

Table 1.2 Changes from draft determination in average prices over the determination period, by valley and water source, DNR ($ Real 2006/07)

Valley	Regulated			Unregulated			Ground water		
	Average price $/ML			Entitlement-only charge $/ML*			Entitlement charge $/ML*		
	Draft	Final	Change	Draft	Final	Change	Draft	Final	Change
Border	3.26	3.09	-5%	2.87	2.52	-12%	1.63	1.66	2%
Gwydir	2.20	2.05	-7%	2.87	2.52	-12%	1.63	1.66	2%
Namoi	2.99	2.55	-15%	2.87	2.52	-12%	1.63	1.66	2%
Peel	5.69	5.36	-6%	2.87	2.52	-12%	1.63	1.66	2%
Lachlan	3.05	2.96	-3%	4.30	4.27	-1%	2.31	2.22	-4%
Macquarie	2.52	2.53	1%	4.30	4.27	-1%	2.31	2.22	-4%
Far West				4.29	4.29	0%	3.09	3.02	-2%
Murray	1.82	1.66	-9%	3.80	3.81	0%	1.60	1.99	24%
Murrumbidgee	1.50	1.51	1%	6.15	5.60	-9%	1.20	1.03	-14%
North Coast	23.74	22.66	-5%	5.10	5.11	0%	3.09	3.02	-2%
Hunter	4.07	2.90	-29%	3.65	3.62	-1%	3.09	3.02	-2%
South Coast	7.64	7.29	-5%	3.20	3.16	-1%	3.09	3.02	-2%

* Usage charges increased (or decreased) at the same rate as entitlement charges.

For regulated rivers, the reduction and reallocation of MDBC costs accounts for the decrease in average prices in the Murray and Peel valleys and the (small) increases in the Macquarie and Murrumbidgee valleys. The decreases in the Border, Gwydir, Namoi and Hunter valleys are mainly a consequence of setting prices to avoid over-recovery of costs. Setting prices to avoid over-recovery also accounts for the large decreases in average prices for unregulated rivers in the Barwon region[7] and the Murrumbidgee valley.

The changes in ground water prices are mainly due to the new volumetric data, which for some valleys is significantly different to the data used for the draft determination (see Section 10.5). In particular, prices in the Murray valley are significantly higher than in the draft determination due to lower volumes. Average prices in Murrumbidgee valley, on the other hand, are lower due to higher volumes compared to the draft determination.

6 See footnote 5.

7 The Barwon region comprises the Border, Gwydir, Namoi and Peel valleys.

1.3 Overview of the determination

The Tribunal's determination continues to move prices towards cost reflective levels,[8] in accordance with agreed COAG objectives and taking into account the impact on customers. It also restructures prices to meet the requirements of State Water's Operating Licence, and NSW's obligation under the NWI to demonstrate that substantial application of consumption based pricing in rural water service has been achieved.

In relation to State Water, the Tribunal's findings and decisions in relation to the regulatory approach and price structure are to:

- Increase State Water's prices annually by an average of 5.8 per cent above inflation over the 2006 determination period.
- Set prices such that the bill for a General Security customer who extracts water at the average valley rate (relative to their licensed entitlement) will, on average, increase by no more than 15 per cent per annum in real terms over the 2006 determination period.
- Provide for State Water's future capital expenditure using the regulatory asset base (RAB) approach, and to set the value of its opening RAB at 1 July 2004 at $240.8 million (of which $83.5 million is allocated to users).
- Allocate the efficient costs incurred in providing bulk water services between users and the Government based on the principles established in the 2001 determination, with some changes to ratios.
- Restructure the prices for regulated river activities so that in all valleys a greater proportion of revenue is from usage charges as required in State Water's Operating Licence.
- Maintain a two-tier entitlement charge, with a premium for holders of high security licences.
- Remove wholesale discounts and provide an annual rebate to large irrigation companies and districts to reflect the lower billing and customer costs for these customers, and the system-wide benefits that some of their activities provide.

In relation to DNR, the Tribunal's findings and decisions in relation to the regulatory approach and price structure are to:

- Increase DNR's prices annually by an average of 4.1 per cent above inflation over the 2006 determination period. Regulated river prices will increase annually on average by 0.1 per cent below inflation, unregulated river prices by 4.8 per cent above inflation and groundwater prices by 11.8 per cent above inflation.
- Set prices for regulated activities, such that the bill for a customer will increase by no more than 13 per cent per annum in real terms over the 2006 determination period for a constant entitlement and usage volume.
- Set prices for unregulated activities, such that the bill for a customer whose licence is converted (area to entitlement) at the valley average increases by no more than 15 per cent per annum in real terms over the 2006 determination period.
- Set prices for ground water such that average prices (assuming constant volumes) increase by no more than 15 per cent per annum in real terms over the 2006

[8] Using upper bound pricing.

determination period. The bill of a customer whose entitlement is reduced at the valley average rate will remain unchanged.

- For unregulated rivers and ground water, no bill will increase by more than 20 per cent per year in real terms, for the same volume of water consumed.
- Maintain the two-part tariff for regulated river activities, with charges set on a valley basis.
- Set an entitlement charge for all water access licence holders on regulated rivers which is independent of the security of supply.
- Phase out wholesale discounts over the determination period.
- Abolish the groundwater base charge by 2009/10.
- Provide irrigators on unregulated rivers the option of electing to be charged on a two-part tariff where they have a meter installed.
- Introduce a minimum bill of $60 per annum for all (DNR) bulk water services in all water sources including regulated rivers, unregulated rivers and ground water**.**

The Tribunal notes that its determination is restricted to maximum prices for a range of bulk water services provided by State Water Corporation (State Water) and the Department of Natural Resources (DNR), in accordance with the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act). In the course of the review, a number of stakeholders have requested the Tribunal address policy and governance issues such as exemptions from *pricing*.[9] These are matters of Government policy and therefore are matters for Government not the Tribunal.

1.4 Overview of implications for customers, cost reflectivity, agencies and environment

In terms of customer impacts, the Tribunal's analysis shows that its determination will mean that:

- For regulated rivers while the maximum increase in average bills[10] is 15 per cent per annum, some irrigators will experience greater increases (depending on the level of security and usage).
- For unregulated rivers and groundwater sources, while the maximum increase in average bills is 15 per cent, some irrigators will experience much greater increases (due to changes in charging structures). The Tribunal has imposed a limit of 20 per cent per annum on these increases, as some individual irrigators may face increases greater than 20 per cent.

The exact impact on any one customer's bill will depend on the customer's extraction rate relative to the valley average, and on the extent to which the customer responds to the price signals provided through the increased variable usage charge.

9 The Nari Nari Tribal Council wrote to the Tribunal requesting that the Tribunal exempt it from the payment of bulk water charges.

10 Assuming the customer holds a General Security licence and its extraction rate is at the long term average for that valley.

The impact on customers' bills varies between valleys because of existing differences between the proportion of revenue collected by the fixed charge versus the variable usage charge, because of differences in valley extraction rates, and because of differences in the cost of service delivery between valleys.

In terms of cost reflectivity, the Tribunal has set valley based prices to better reflect costs in each valley. In setting prices the Tribunal has balanced the requirement to move prices towards cost reflective levels against the impacts on customers. The Tribunal believes that in most valleys it can achieve full cost recovery over the period of the determination. However, in some valleys full cost recovery could not be achieved without substantial increases in tariffs that would have a damaging impact on users. In these cases the Tribunal has decided to limit increases. In some instances (ie, North Coast, South Coast and Peel), the Tribunal considers that cost reflectivity will never be achieved. In such instances, it considers State Water should review the future of these services and consult with government in those cases where it considers that the service could be recognised as a Community Service Obligation.

The Tribunal's analysis shows that for State Water, the bulk water prices for all but four valleys will achieve full cost recovery by the end of the determination period. For DNR's regulated rivers, the bulk water prices for all but two valleys will achieve full cost recovery by the end of the determination period. For its unregulated rivers, all but three valleys will achieve full cost recovery by the end of the period (or over the full period). In the case of groundwater services, three valleys will achieve full cost recovery by the end of the period.

In terms of agency impacts, the Tribunal's analysis indicates that its determination will allow the agencies to recover most of the users' share of the efficient costs of providing bulk water services, including meeting regulatory and service standards.

In relation to State Water:

- The net effect of the Tribunal's findings is that the efficient level of forecast operating expenditure used in calculating State Water's notional revenue requirement for the 2006 determination period is $205.1 million. This amount is $13.5 million or 7 per cent more than the Tribunal's draft finding for forecast operating expenditure (see Table 7.9). The increase in operating expenditure is due to a range of factors including the increase in State Water's revised forecasts to take account of its revised capitalisation policy.
- The net effect of the Tribunal's findings is that the level of efficient forecast capital expenditure used in calculating State Water's notional revenue requirement for the 2006 determination period is $107.5 million. This amount is $32.4 million or about 23 per cent less than the Tribunal's draft finding for forecast capital expenditure (see Table 8.5).

In relation to DNR:

- The net effect of the Tribunal's findings is that the level of efficient forecast operating expenditure used in calculating DNR's notional revenue requirement for the 2006 determination period is $184.4 million (see Table 6.3). This amount is $32.8 million or 14.9 per cent less than the agency's forecast operating expenditure.
- The net effect of the Tribunal's findings is that the level of efficient capital expenditure used in calculating DNR's notional revenue requirement for the 2006 determination period is $9.0 million. This amount is the same as DNR's forecast capital expenditure.

In terms of impacts on the environment, the determination explicitly takes account of activities required to address water resource management issues to comply with instruments such as the *Water Management Act 2000* (including the water sharing plans) and the NWI.

The Tribunal explicitly considered these impacts and is satisfied that it has achieved a reasonable balance between the competing Section 15 matters.

1.5 Moving forward

A key concern of this review by the Tribunal and stakeholders has been the transparency and efficiency of costs. In its reviews of the agencies' operating and capital expenditure proposals, the Tribunal's consultants, PB Associates, identified a number of deficiencies.

The major deficiencies identified by PB Associates for State Water included:

- the financial systems were not sufficiently developed to provide it with an accurate and robust forecast of costs
- there was no demonstration of price-service information or customer input being used to determine the appropriate non-mandatory levels of service
- insufficient linkage between the planned programs, the targets to be achieved, and the associated costs
- the procedures for assessing non-major (<$500,000) capital projects was unclear.[11]

For DNR, PB Associates identified the major deficiencies as:

- inadequate risk-based analysis, including price service negotiations with stakeholders to determine willingness to pay for specified levels of service and timing of the provision of these services
- insufficient linking of expenditure to obligations
- an absence of demonstrated options analysis for the proposed service delivery expenditures, including testing contestability of tasks and services provided.

Therefore, the Tribunal expects that State Water and DNR will address the concerns raised by PB Associates (and Halcrow/MMA) prior to the next determination. The Tribunal is concerned that State Water and DNR have made little progress in the last 10 years in addressing these concerns. The Tribunal may be reluctant to approve increases at the next determination without substantial progress in this area. In relation to the MDBC costs, the Tribunal notes that there has been no independent examination of its efficiency. The MDBC is outside the Tribunal's jurisdiction. However, the Tribunal believes that the governments that are signatories to the agreement should consider initiating a study of the efficiency of the MDBC's operations before agreeing to fund expenditures which are then to be passed on to irrigators.

In addition, both State Water and DNR need to develop and publish performance indicators and measures so that stakeholders can monitor delivery against forecast outputs and outcomes. Output performance indicators and measures will help ensure that the agencies are more accountable for their expenditure. As a starting point the Tribunal has included in

[11] The Tribunal notes that Halcrow/MMA subsequently reviewed this matter and stated that it was satisfied that the State Water's Project Delivery System is robust.

this determination a schedule of reporting obligations in response to the proposal by the NSW Irrigators' Council. The Tribunal expects State Water and DNR to report this information to the Tribunal for publication on its website.

1.6 Structure of this report

This report explains the Tribunal's determination in detail, including how and why it reached its decisions and what those decisions mean for the water agencies, their customers and other stakeholders:

- Chapter 2 outlines the main factors that guided the Tribunal's decision making, including the requirements of the IPART Act, the NSW Government's commitments on water prices under COAG, the recent changes in the legislative and industry arrangements for bulk water, and the established principles for setting water prices
- Chapter 3 describes the services and activities covered by the bulk water determination
- Chapter 4 explains the Tribunal's approach to setting bulk water prices and outlines its decisions on key elements of this approach, including the length of the determination period, the methodology for calculating the revenue required for forecast capital expenditure, performance indicators, and the treatment of costs associated with the Murray-Darling Basin Commission and the Dumaresq-Barwon Border River Commission
- Chapter 5 explains the Tribunal's findings on the ratios to be used in allocating the revenue required by each agency between the users and government
- Chapters 6 to 9 discuss the findings related to the calculation of these revenue requirements over the 2006 determination period:
  - Chapter 6 provides an overview of the decisions on the revenue requirement for each agency, and the user and government shares of each component of this revenue
  - Chapter 7 explains the findings on the revenue required for operating expenditure
  - Chapter 8 explains the findings on the efficiency of the agencies' forecast capital expenditure
  - Chapter 9 explains the findings on the revenue required for capital investment, including an appropriate return on assets and a return of capital (depreciation)
- Chapter 10 provides an overview of the Tribunal's findings on the bulk water consumption forecasts and entitlement volumes that have been used to calculate prices for bulk water services
- Chapter 11 sets out the Tribunal's findings on the structure of bulk water prices, including those on the balance between fixed and variable usage charges for State Water's regulated river charges, the premium for high security entitlements, the wholesale discount for irrigation corporations, area-based charges for irrigators, fixed and usage charges for town and industry licence holders, and the groundwater base charge
- Chapter 12 sets out the Tribunal's decisions on the prices for specific bulk water services
- Chapter 13 analyses the impact of the pricing decisions on State Water and DNR, their customers and the environment

- Appendix 1 sets out the matters to be considered by the Tribunal under section 15 of the IPART Act
- Appendix 2 provides an overview of the COAG water framework
- Appendix 3 provides details of the Tribunal's decision on the WACC for State Water
- Appendix 4 shows the allocation of costs to each valley
- Appendix 5 sets out the calculation of entitlement based charges on unregulated rivers
- Appendix 6 sets out the impact of Tribunal decisions on State Water and DNR charges
- Appendix 7 sets out the basis for allocating MDBC asset costs valleys
- Appendix 8 sets out the reporting obligations for State Water and DNR for the determination period.

The Tribunal members for this review are Michael Keating AC, Chairman, James Cox, Full time member, and Sibylle Krieger, Part time member. The Tribunal also wishes to acknowledge the input of Cristina Cifuentes (former Part time member).

Box 1.1 Tribunal's review process

The Tribunal's review included an extensive investigation and public consultation process. As part of this review, the Tribunal:

1. Released an issues paper in September 2004. In its 2005 review, the Tribunal stated that it would have been inappropriate to deal with a number of issues raised in this issues paper and in submissions to the 2005 review due to time and data constraints. The Tribunal flagged that these issues would be considered as part of the 2006 review.
2. Invited State Water and DNR to provide submissions detailing their pricing proposals, and required them to provide extensive financial and performance data on the future capital and operating expenditure they believe will be necessary to maintain their customer service levels and respond to regulatory and customer demands. Submissions from State Water and DNR were received on 10 October 2005.
3. Invited other interested parties to make submissions after reviewing the agencies' submissions. A total of 120 written responses were received.
4. Held a public hearing in Sydney on 25 November 2005 to discuss the agencies' submissions with workshops in Moree, Griffith and Dubbo in January and February 2006. The agencies presented their submissions and took questions from the Tribunal and stakeholders on them.
5. Engaged the Centre for International Economics (CIE) to independently review:

- the agencies' forecasts of water consumption over the period 2006/07 to 2009/10 and advise the Tribunal on the validity of these forecasts for the purposes of setting prices
- the cost allocation proposed by DNR and State Water and advise the Tribunal with a recommended approach to cost allocation and the implications of adopting the recommended approach
- the level of wholesale discounts provided to large private irrigation companies and districts in the Murray, Murrumbidgee and Lachlan valleys on water entitlement charges.

6. Engaged PB Associates and Halcrow/MMA to conduct a review of State Water's and DNR's capital expenditure, asset planning and operating expenditure proposals.
7. Engaged the Australian Bureau of Agricultural and Resource Economics (ABARE) to assess the impact of higher bulk water charges on irrigators' costs and net incomes in the major regulated river valleys in New South Wales.
8. Released the draft report and determinations for public comment on 31 May 2006 detailing the decisions made and the reasons for them, and inviting public submissions.
9. Considered the public submissions received on the draft report and determinations and held a public hearing on 30 June 2006.
10. Published and released this final report and pricing determinations.

NOTE

The financial information in the Draft Report was generally presented in $2006/07. As most financial data and prices were provided in $2005/06, this generally required an inflation adjustment. For this an assumption of 3.1 per cent was applied for 2006/07. Since the Draft Report, inflation estimate for 2006/07 has been revised to 3.3 per cent. As a result, some of the figures set out in this report may differ from those in the Draft Report.

The Tribunal believes that the consultation it undertakes in assessing State Water's and DNR's submissions should alleviate some of the concern raised by the National Water Commission[12] about the level of public consultation and education on DNR's water resource management charges.

[12] National Water Commission, 2005 National Competition Policy assessment of water reform progress, March 2006.

2 FACTORS THAT INFLUENCED THE TRIBUNAL'S DECISION MAKING

The Tribunal's decision making on the level and structure of bulk water prices has been guided and influenced by a range of factors. These factors include:

- the requirements of the IPART Act, which is the legislation under which it sets bulk water prices
- the NSW Government's commitments in relation to water pricing, as a signatory to COAG's Water Reform Framework and the NWI
- the changes that have occurred in the legislative and industry arrangements for the delivery and regulation of bulk water services since the 2001 determination
- the principles for setting bulk water prices that the Tribunal established in 1996.

Each of these factors is outlined in the sections below.

2.1 Requirements of the IPART Act

The Tribunal makes its determinations on bulk water prices under the IPART Act. This Act requires the Tribunal to consider a broad range of issues when setting prices. In particular, section 15 of the Act requires it to consider a range of matters related to:

- **consumer protection**—including protecting consumers from abuses of monopoly power; standards of quality, reliability and safety of the services concerned; and the social and economic impact of its decisions (such as their effect on the affordability of services and on inflation)
- **economic efficiency**—including the need to promote greater efficiency in the supply of services and competition
- **financial viability**—such as the rate of return on public sector assets (including dividend requirements) and the impact of pricing on the borrowing, capital and dividend requirements of agencies
- **environmental protection**—including the promotion of ecologically sustainable development via appropriate pricing policies; and the need to encourage demand management.

In considering these matters, the Tribunal needs to balance the diverse needs and interests of stakeholders—such as customers' need for services to be affordable and of a reasonable quality, and the community's need for prices that encourage sustainable development. It also needs to ensure the long-term financial viability of the agencies that provide the services.

2.2 Commitments under COAG's Water Reform Framework and National Water Initiative

In making its determinations, the Tribunal takes into account policies adopted at a national level and agreed to by NSW. As a member of COAG, the NSW Government has made commitments in relation to water pricing as part of COAG's *Water Reform Framework*, agreed in 1994, and the NWI, agreed in 2004. A key theme of both these documents is the need to set water prices to achieve full cost recovery.

The NWI provides guidance on policies to improve the management of Australia's water resources. The NWI principles most relevant to this review include:

- establish pricing policies for water storage and delivery in rural and urban systems that facilitate efficient water use and trade in water entitlements
- continue to use consumption-based pricing to achieve full cost recovery of water services including recovery of environmental externalities
- apply lower bound pricing for all rural systems and continue to move towards upper bound pricing where practicable[13]
- achieve full cost recovery for all rural surface and groundwater based systems, recognising that there will be some small community services that will never be economically viable but are necessary for social and public health reasons
- establish consistent approaches to pricing and attributing costs of water planning and management by 2006
- implement pricing that includes externalities where found to be feasible.

A number of submissions questioned the Tribunal's interpretation of the third principle, related to lower and upper bound pricing, stating that it was not practicable to move to upper bound pricing and that State Water's prices should be set at the lower bound. The Tribunal notes that this principle was one of a number of factors considered in its final decision but that is closely related to considerations of business viability and economic efficiency. In the longer run, governments cannot afford to invest in businesses that do not recover the cost of capital, especially when taxpayers could receive a higher return on their funds by investing elsewhere.

The Tribunal recognises the importance of the NSW Government's COAG commitments, particularly to ensure longer-term environmental sustainability and economic efficiency. In setting bulk water prices it seeks to balance these with other important considerations, including the ability of bulk water users to absorb the price rises required to achieve full cost recovery, and its own obligations under the IPART Act.

[13] Lower bound pricing is the level at which to be viable a water business would recover at least the operational, maintenance and administrative costs, externalities, taxes or TERs (not including income tax), the interest cost of debt, dividends (if any) and make provision for future asset refurbishment/replacement. Upper bound pricing is the level at which a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes or TERs, provision for the cost of asset consumption and cost of capital.

The Tribunal notes that the National Water Commission (NWC) recently reviewed NSW's compliance with the National Competition Policy.[14] Areas highlighted by the NWC that are relevant for this review include:

- the transparent allocation of the Murray-Darling Basin Commission costs among users
- the impact on customers and judgements made by the Tribunal in moving to cost reflective pricing
- the expected removal of wholesale discounts.

The Tribunal has considered these matters when making its decisions on prices. This report separately identifies how the MDBC costs have been allocated to users and expands on the reasons for the Tribunal's decisions.

2.3 Changes in legislative and industry arrangements

In the last five years, the context in which bulk water prices are set has changed in important ways. These changes, which were driven by the State Government's commitments under COAG, as well as its own policy for ensuring the long-term sustainability of water supplies and protection of the environment, include:

- The final separation of bulk water delivery and water resource management activities through the corporatisation of the deliverer, State Water, in July 2004, supported by changes to State Water's operating licence which require it to generate a greater proportion of its revenue from usage charges.
- The progressive implementation of the *Water Management Act 2000* (and as amended in 2004 and 2005) (WMA), particularly through reforms to water licensing arrangements and the gazetting of the current catchment water sharing plans. The water sharing plans set out how access to water is shared between water users and the environment for most regulated rivers. The water sharing plans have been developed by community based Water Management Committees. State Water's river management operations are required to comply with the water sharing plans.
- Through separate legislation, the establishment of Catchment Management Authorities (CMAs) as part of a process of devolving some responsibilities of the (now) Department of Natural Resources (DNR) to the regional level.
- The establishment of the Natural Resources Commission (NRC) through legislation which, among other things, gives it responsibility for reviewing water sharing plans.

All of the above changes have affected the agencies' activities and, in turn, to differing extents, their associated costs. State Water's and DNR's submissions reflect these changes. In addition, the changes have explicitly been taken into account by consultants engaged by the Tribunal to provide advice on issues such as cost sharing.

[14] National Water Commission, 2005 National Competition Policy assessment of water reform progress, March 2006.

2.4 Tribunal's principles for bulk water pricing

As part of its 1996 determination, the Tribunal established a set of principles for setting bulk water prices to achieve the best possible balance between competing claims within the community. These principles have guided the Tribunal's subsequent determinations, including this 2006 determination. They take into account the Tribunal's obligations under the IPART Act and the Government's policies and commitments as part of COAG.

These principles are that:

- Water charges should be based on the efficient economic costs of providing water services.
- The administrator of water resources should receive sufficient funds to achieve financial stability and deliver an appropriate level of water services.
- Pricing policy should encourage the best overall outcome for the community from the use of water and the other resources used to store, manage and deliver that water.
- The cost of water services should be paid by those who use the services. Those who cause more services to be required should pay more.
- Pricing policy should promote ecologically sustainable use of water and of the resources used to store, manage and deliver that water.

3 ACTIVITIES COVERED BY BULK WATER PRICES

The bulk water prices regulated by the Tribunal for services provided by State Water and DNR include charges for extractions of bulk water from regulated rivers, unregulated rivers and groundwater sources. In general, State Water's services include river operation services provided within regulated river systems (ie, rivers that have their flow regulated by dams or weirs). DNR's services include water resource management services within regulated rivers, unregulated rivers and groundwater sources. The prices charged for these services aim to recover the costs incurred by the agencies in:

- making water available
- making available State Water's and DNR's water supply facilities
- supplying water, whether by means of State Water's and DNR's water supply facilities or otherwise.[15]

This chapter outlines the roles of State Water and DNR and the main activities they undertake in relation to bulk water services—including river operation activities, water resource management activities, licensing activities and activities related to the Fish River Water Supply Scheme. The roles and cost recovery arrangements for Murray-Darling Basin Commission (MDBC) and Dumaresq-Barwon Border River Commission (DBBRC) in river operation and water resource management activities are also explained.

3.1 River operation activities

River operation activities relate to those activities undertaken to provide bulk water to users on regulated rivers. They include:

- water delivery operations (taking customer orders, determining and implementing storage releases, monitoring water usage and administering customers' water accounts)
- asset management of dams, weirs and other water storage structures
- flood mitigation (including inflow and outflow forecasting, floodwater routing).

Most of these activities are provided directly by State Water, while some are provided through cross-jurisdictional bodies including the MDBC and the DBBRC. The roles and activities of each of these entities is explained below.

3.1.1 State Water

State Water is a statutory State-owned corporation. Its principal objective is to supply water to licensed users, and stock and domestic users in an efficient, effective, financially and environmentally responsible manner.

State Water operates 20 major dams, 280 weirs and regulators, and associated assets on regulated rivers. It has around 6,200 customers, including irrigation corporations, country town water supply authorities, farms, mines and electricity generators. It also meets

15 These are the services that the Premier has declared on 10 September 2004 to be monopoly services.

community needs by providing water for stock and domestic users, and is responsible for maintaining environmental flows on regulated rivers.

State Water operates under a regulatory framework similar to those of Hunter Water, Sydney Water and the Sydney Catchment Authority. It is subject to:

- an Operating Licence administered by the Portfolio Minister that prescribes explicit operating conditions to ensure that it is managed efficiently and in line with Government and community expectations
- periodic audits of its performance against the terms and conditions of this licence
- a Statement of Corporate Intent negotiated annually with the Treasurer
- Water Management Works Approvals issued by DNR in accordance with the *Water Management Act 2000*
- Memoranda of Understanding negotiated with other key regulatory agencies such as the Department of Environment and Conservation.

3.1.2 MDBC and DBBRC

The MDBC and DBBRC are cross jurisdictional bodies established to promote and co-ordinate effective planning and management for the equitable, efficient and sustainable use of the water, land and other environmental resources. Some bulk water services are provided to users under the 'umbrella' of these bodies. MDBC has a separate internal business unit, River Murray Water, which is responsible for operating and managing the River Murray system. The separate business unit provides a clear distinction between the service delivery functions of the MDBC and its resource management and policy setting functions. The costs of managing and maintaining assets under the MDBC and DBBRC arrangements are jointly paid for by the signatory states and the Commonwealth and are allocated to each signatory in a proportion defined under the terms of the agreements.

The Government pays the NSW share of these costs to MDBC and DBBRC. In relation to river operation activities (which, in the case of MDBC, are undertaken by River Murray Water), it seeks recovery of the NSW share of costs[16] from State Water. In turn, State Water seeks recovery of the user-share component of these costs through its bulk water prices which it pays to Government.[17]

3.2 Water resource management activities

Water resource management (WRM) activities arise from the need to manage a resource that is being consumed by a wide range of user groups. The overriding aim of the WRM activities is to ensure the long-term sustainability of the resource, to allow continued water extraction and maintain the health of the natural ecosystem.

16 The NSW costs include capital costs based on the annuity approach.

17 The NSW share of water resource management costs are allocated to DNR – see section 3.2.2.

3.2.1 Department of Natural Resources

DNR has wide-ranging responsibilities, which include managing NSW's water resource under the *Water Management Act 2000*. This Act requires DNR to introduce water sharing plans to manage the resource, and to specify clear objectives in each of these plans. These plans are also to specify the rules for accessing and sharing the resource.

DNR stated in its submission to this review that the WRM activities include activities:

- to promote the long-term sustainability of the resource, to allow continued water extraction and to maintain the health of natural ecosystem
- that are necessary to manage the impacts of the past, current and future patterns of extractive water use
- that are concerned directly with the hydrology of the NSW surface and groundwater systems (as opposed to wider catchment management activities, although there are close linkages)
- that protect the integrity of the entitlement system and the security of users' authorised access to water.[18]

Based on this definition, the WRM activities for which the Tribunal regulates prices involve activities such as:

- collecting data to gain a better understanding of the levels of extractions as well as the potential implications of this extraction for the river system, and managing this database
- developing policies to manage the resource which could involve broader Government policy development to manage the interstate sharing of resources
- developing plans/strategies to allocate water among users and the environment, and to remediate problems such as salinity and blue green algae
- implementing these plans and monitoring compliance against the plans.

In 2005, DNR developed a new system of classifying and reporting its WRM costs based on activities (primarily inputs) rather than products (nominally outputs). DNR believes that by measuring activities it is more closely matching the various elements of WRM to the costs concerned, which enables it to more accurately forecast its future costs.

In addition, DNR has restructured its service delivery functions and devolved various responsibilities to the newly formed CMAs, the NRC and the National Resource Advisory Council. However, only a relatively small subset of CMA responsibilities are WRM related.

3.2.2 MDBC and DBBRC

The MDBC and DBBRC have responsibility for coordinating and managing WRM activities from a 'whole of system' perspective where the issues involve more than one state. These include activities such as monitoring water quality, managing ground water, monitoring bores and developing/implementing salinity mitigation strategies.

18 DNR, submission to IPART to set Water Resource Management Charges from 1 July 2006, p 9.

As with the river operations costs, the Government pays the NSW share of these costs to MDBC and DBBRC. In relation to water resource management activities, it then seeks recovery of the NSW share of costs from DNR. In turn, DNR seeks recovery of the user-share component of these costs through its bulk water prices.

3.3 Licensing activities

DNR is responsible for administering the planning and water management consents (access and approvals) under the *Water Management Act 2000* (WMA). This includes a wide range of activities such as administering licence applications, renewals and transfers (both temporary and permanent). It also includes transactions on works and use approvals in areas subject to water sharing plans.

The relevant provisions of the WMA came into effect from 1 July 2004. While some of these activities are consistent with DNR's previous licensing activities some relate to entirely new categories of activities or to activities previously licensed in a different manner. The Minister has requested the Tribunal set licence fees for activities under the WMA.

3.4 Fish River Water Supply Scheme activities

The Fish River Water Supply Scheme (Fish River Scheme) was, until January 2005, a Government Trading Enterprise that operated as a bulk water supplier on the Fish River. The scheme sources water from Oberon Dam and supplies bulk water to four major customers – Delta Electricity, Lithgow City Council, Oberon Council and the Sydney Catchment Authority. It also provides water to a number of smaller customers (approximately 240). These smaller customers include farmers (not irrigation) and some industrial customers (eg, collieries) who effectively use the water for domestic purposes (such as showers, toilets). The water is supplied to customers through pipes.

Historically the bulk water prices related to the scheme have been set by the Minister, although customers appear to have had a significant influence on the operating/capital expenditure proposals and consequent price outcomes via a Customer Advisory Council, made up of the four large customers.

Under the *State Water Corporation Act 2004* (SWC Act) State Water took responsibility for the Fish River Scheme when it was declared a water supply authority under the WMA. The operation of this provision took effect from 1 January 2005.

4 DECISIONS ON REGULATORY ARRANGEMENTS AND PRICE SETTING APPROACH

As part of this review, the Tribunal considered the appropriate length of the determination period and other issues related to the regulatory arrangements for bulk water services. It also considered a range of issues related to its price setting approach, which were raised in the 2005 review or in submissions to the 2006 review. Its findings on these matters are discussed below.

4.1 Regulatory arrangements

In addition to setting the maximum prices for bulk water services over the determination period, the Tribunal has made a number of decisions related to other aspects of the regulatory arrangements for this determination. These include decisions on:

- the length of the determination period
- whether to establish a revenue shortfall adjustment mechanism
- whether to adjust the agencies' forecast expenditures to account for under expenditure of the operating and capital cost allowed for in past determinations
- whether there are mechanisms to ensure that agencies are more accountable for their performance.

4.1.1 Determination period

The Tribunal's decision is that the determination period will end on 30 June 2010.

In deciding on the length of the 2006 determination period, the Tribunal considered the benefits of a longer determination period, including stronger incentives for the agencies to increase efficiency, greater stability and predictability (which may lower agencies' business risk and assist investment decision-making), and lower regulatory costs. It also considered the disadvantages of a longer determination period, including the increased risk associated with inaccuracies in the data used to set prices, the delay in customers benefiting from efficiency gains, and the risk that changes in the industry will affect the appropriateness of the determination.

The water agencies prepared submissions based on a five-year determination period, up to 30 June 2011. The Tribunal believes that a determination period of about four years strikes an appropriate balance between providing incentives for improving efficiency, reducing regulatory uncertainty, and minimising the risk that changes in the industry will affect the appropriateness of the determination.

4.1.2 Revenue shortfall adjustment mechanism

The Tribunal's finding is not to introduce a revenue shortfall adjustment mechanism in this determination period.

In its submission, State Water asked the Tribunal to consider establishing a mechanism to reduce revenue risk arising from variations between actual and forecast water usage. It argued that the requirement in its licence to change the balance between fixed to variable charges, together with other changes to water administration required under the water sharing plans, will increase the variability of its water sales and thus the volatility of its revenue. To address this risk, it proposed that for price setting purposes, the Tribunal base the forecast level of water consumption on the 100-year average usage reduced by one standard deviation. This could result in a consumption level that is between 12.5 per cent and 25 per cent lower than the 100-year average.

The CIE considered the issue of revenue risk associated with consumption as part of its review of State Water's consumption forecast (see Chapter 10). It commented that one option for addressing this risk was to take account of it in calculating each agency's weighted average cost of capital (WACC). However, a range of stakeholders (including Lachlan Valley Water, Murray Irrigation, Murrumbidgee Irrigation, NSW Irrigators' Council and Macquarie River Food & Fibre) opposed this option, and queried the rationale for the costs of any risk being borne by users.

Namoi Water submitted that State Water's revenue risk should be passed on to Government rather than to customers. Similarly, Macquarie River Food & Fibre submitted that the Government should fund any revenue shortfall due to variations between actual and forecast water usage through dividends, because it is the Government's operating licence conditions that are driving State Water's increased revenue volatility risk. NSW Irrigators' Council submitted that State Water could manage the revenue volatility risk through insurance products.

In addition to considering the views put forward by stakeholders and its consultant, the Tribunal carried out its own analysis of the potential impact on State Water of consumption volatility and considered the options for risk mitigation:

- It considered addressing revenue risk by adjusting the range for the WACC but, consistent with the approach it has adopted in regulating other utilities, it does not believe this approach is appropriate.
- It was prepared to consider factoring efficient risk management costs, such as insurance, in to State Water's operating expenditure. After it had made its submission State Water advised the Tribunal that it intended to explore the option of insuring against revenue risk. It subsequently advised that this was not a feasible approach, as insurance costs were excessive.
- It considered the feasibility of designing and implementing a specific regulatory mechanism (eg, a price adjustment mechanism, mid term review) to address potential volatility. On balance, it is not persuaded that there are sufficient benefits to pursue this approach, particularly given the associated data requirements and other uncertainties.

Therefore, the Tribunal has decided not to allow for adjustments to be made to prices associated with revenue risk during this determination period.

4.1.3 Under-expenditure of past operating and capital cost allowances

The Tribunal's finding is not to adjust for under-expenditure of past operating and capital allowances.

Several stakeholders argued that State Water had spent less on capital and operating costs than allowed for in the 2001 determination and that an adjustment was required to account for this under-expenditure. One suggested that the differences should be credited to State Water's opening financial statements. In an informal response to the Tribunal, State Water noted the difficulties in reconciling past historical versus actual expenditure, particularly given its new status as a separate entity.

The Tribunal considered arguments put forward by stakeholders (including NSW Irrigators' Council) and State Water, undertook its own analysis, and requested PB Associates to investigate this issue as part of its wider review of the agencies' operating and capital cost forecasts.

As a general principle, the Tribunal prefers not to factor ex post adjustments into future prices because this reduces incentives for businesses to operate its costs efficiently. However, where large variations occur, these may be factored into prices. Alternatively, explicit regulatory mechanisms may be developed and applied.

In the case of State Water, the Tribunal has analysed the difference between the actual and forecast expenditure, the proportion of these costs that was to be recovered from users, and the actual revenue collected from users. This analysis of State Water's cash expenditures shows that while there was a significant difference between the forecast and actual costs to be recovered from users, the actual revenue received from user tariffs was also less than actual costs, and much less than forecast costs (Table 4.1). Given that State Water had limited access to debt and that its capital program was funded through an annuity, it can be argued that it was necessary for State Water to adjust its planned expenditure to manage its cash position.

Taking account of these factors, the Tribunal does not intend to adjust the forecast expenditure for differences between past forecast and actual expenditures. However, it notes that it and its consultants have closely considered the issue of forecasting performance in assessing State Water's capital expenditure proposals (see Chapter 8).

Table 4.1 State Water's actual expenditure compared to forecast expenditure and actual revenue from tariffs (user-share), 2001/02 - 2004/05 ($million, nominal)

User-Share	2001/02	2002/03	2003/04	2004/05
Forecast operating and capital expenditure	33.5	36.9	36.1	41.4
Actual operating and capital expenditure	30.9	28.0	26.2	33.5
Difference	**(2.7)**	**(8.9)**	**(9.9)**	**(7.9)**
Actual operating and capital expenditure	30.9	28.0	26.2	33.5
Actual revenue recovered from tariffs	25.2	26.2	21.4	29.6
Difference in cashflows	**(5.7)**	**(1.8)**	**(4.7)**	**(3.9)**

Note: Totals may not add due to rounding.

4.2 Price setting approach

As in previous determinations, the Tribunal adopted a building blocks approach to calculating the efficient costs to be recovered through user charges, and a CPI-X regulatory approach to setting prices. Within this approach, maximum bulk water prices for users are set by:

- establishing the efficient costs incurred by each water agency in undertaking the activities related to bulk water services, including operating expenditure, capital expenditure and the cost of funding capital
- deciding on the share of these costs which should be sought to be recovered through user charges, versus being funded by the community, through government
- calculating the overall revenue requirement for each agency (agency revenue requirement), and the share of the agency revenue requirement to be recovered from users (user-share revenue requirement)
- calculating prices and a CPI-X price path for users taking account of the user-share revenue requirement, assumed consumption and entitlement volumes, and the other matters the Tribunal must consider under Section 15 of the IPART Act.

In addition, as part of this review, the Tribunal has considered and made decisions on a range of issues related to this broad price setting approach. These include decisions on:

- the approach to calculating the revenue requirement related to forecast capital expenditure
- the treatment of MDBC and DBBRC costs
- the approach to factoring entitlements associated with conveyance licences into prices
- the approach to setting prices for services provided by the Fish River Water Supply Scheme.

4.2.1 Approach to calculating revenue required to fund forecast capital expenditure for State Water

The Tribunal's finding is to calculate the revenue required to provide for State Water's future capital expenditure using the regulatory asset base approach.

In previous determinations on bulk water prices, the Tribunal has calculated the revenue required for State Water's future capital expenditure using an annuity approach. The details of this approach were refined over time. In the report accompanying the 2001 determination, the Tribunal noted that the approach to funding capital expenditure on long lived assets would be looked at as part of the next review.

In its submission to this review, State Water proposed that the revenue required for its future capital expenditure for long lived assets should be calculated using a regulatory asset base (RAB) approach, rather the annuity approach. The RAB approach includes an explicit allowance for depreciation, as well as an allowance for a return on the RAB. State Water argued that this approach is consistent with the approach used by the Tribunal for other regulated entities and will result in a financially sustainable business. State Water also put the view that this approach is consistent with the NWI principles of upper bound pricing, and with the NSW Commercial Policy Framework under which State Water was corporatised with an opening asset value.

In its Draft Report, the Tribunal considered State Water's proposal. It also considered:

- its past decisions, and changes made over time
- submissions from other stakeholders (including NSW Irrigators' Council, Murrumbidgee Irrigation, Gwydir Valley Irrigator's Association, Namoi Water and Lachlan Valley Water Inc)
- its own analysis of the options available, including continuing to use the annuity approach, adopting the RAB approach and using constant amortisation approaches[19]
- the factors set out in Section 15 of the IPART Act.

After considering the various arguments for and implications of adopting each of the three possible approaches, the Tribunal decided to adopt a RAB approach in its Draft Report. The Tribunal has used a RAB approach in other industries, and considers that this approach is generally superior in terms of economic efficiency and regulatory effectiveness. For this reason, it considers that in the long term, a decision to adopt the RAB approach for bulk water pricing is inevitable. It also considers that deferring the adoption of the RAB approach until after the 2006 determination would only make its adoption at a later point more difficult.

The Tribunal notes that stakeholder responses, including State Water's submission, to its Draft Report generally supported the adoption of the RAB approach. On the other hand, NSW Irrigators' Council (NSWIC) commented that it is not convinced that adopting a RAB will be of long-term benefit to its members and believes that the Tribunal must demonstrate that the abolition of the "line-in-the-sand" approach will not lead to future disadvantage for industry. Gwydir Valley Irrigator's Association (GVIA) and Namoi Water reaffirmed their

[19] Refer to IPART's, *Bulk Water Prices from 2005/06 - Issues Paper*, September 2004, for a more detailed discussion on these options.

original arguments that the opening RAB should be based only on the roll-forward of post-1997 expenditure, in accordance with the Tribunal's 1997 'line-in-the-sand'.

The Tribunal's finding is to adopt its draft finding to calculate the revenue required for State Water's future capital expenditure using the RAB approach. The Tribunal notes that moving from an annuity to RAB approach does not necessarily constitute a shift from lower to upper bound pricing. In addition, it notes that both the annuity and RAB approaches return capital over the life of the assets, but over different profiles.

The Tribunal has considered the concerns about the opening RAB value, as well as the impact on State Water's financial viability, the impact on customers, and consistency with its previous decisions when establishing a value for the initial opening RAB. Its finding on the initial opening value is discussed in section 9.2.2.

4.2.2 Treatment of MDBC and DBBRC costs

The Tribunal's finding is to allow as total MDBC costs no more than the amount that the NSW Government has agreed to pay to the MDBC and DBBRC as set out in the 2006/07 NSW Budget Paper.

The costs attributed to MDBC and DBBRC for both State Water and DNR have been an ongoing source of concern to stakeholders and the Tribunal in setting bulk water prices. Stakeholders are largely concerned about the transparency of these costs and the way they are allocated between users and government, and how user-share of these costs is allocated to valleys. The Tribunal is also concerned about transparency, and about incentives for efficient management of these costs.

In past determinations, bulk water prices have been set by treating the amounts the agencies submitted for MDBC and DBBRC costs as pass through amounts. Forecasts of these costs have been added to each agency's efficient costs to be recovered through user charges and government.

State Water proposed a new approach to the treatment of MDBC costs for the 2006 determination period. Rather than these costs being treated as pass through amounts in the year in which they are incurred, State Water proposed that MDBC costs related to **operating expenditure** continue to be treated as pass through amounts. However, State Water proposed that those costs related to **capital expenditure** and assets be calculated by considering the return on and of capital for a MDBC regulatory asset base and adding this asset base to its own RAB.

As discussed in the Draft Report, there was little support for State Water's proposal and the Tribunal did not believe this change was appropriate. The Tribunal's decision is not to adopt State Water's proposal and to continue to add an allowance for these costs to the agencies' efficient costs.

Since the Draft Report, the 2006/07 NSW Treasury Budget Papers have been released. The 2006/07 and forward estimates for 2007/08 to 2009/10 provide $26.341 million per annum for payments to the MDBC. The Government has committed to cap payments at this amount (in real terms), not withstanding increases in MDBC's budgets. The Tribunal considers that allowing for the budgeted costs means that irrigators (and other customers) would only pay

for costs that reflect the actual costs paid to MDBC and DBBRC by the NSW government, rather than the amounts forecast by the agencies.

In implementing this approach, the Tribunal sought additional information in relation to the MDBC budget, as well as the activities and assets to which it relates. The Tribunal used this information to assess the appropriate allocation between State Water and DNR, the user share of costs and their distribution across valleys.

As noted in Chapter 7, The Tribunal has applied the costs relating to River Murray Water to State Water and the Water Resource Management component of the remainder to DNR. The Tribunal has also applied an efficiency adjustment to the River Murray Water costs in recognition that there may be scope for efficiency gains.

The Tribunal has also considered the activities and assets in the MDBC budget to enable it to allocate costs between users and government. In general, the Tribunal has applied the same cost share ratios that it applied for similar activities in State Water and DNR. However, in a few cases the Tribunal has made a judgment on the appropriate user share. The user shares are discussed more in Chapter 5.

In the draft determination the Tribunal allocated all of the MDBC costs relating to State Water to the Murray valley. As part of its further work, the Tribunal considered the location of assets and their purpose to determine to which valleys the costs should be distributed. The basis for this allocation is set out in Appendix 7. In general, costs were allocated to the Murray valley except where the infrastructure served a wider area than the Murray. Allocation of costs to other valleys was based on extractions. The net result of this work is that the Tribunal has concluded that some of the costs of the MDBC should be paid by users in other valleys. Consequently prices in the Murray valley will be lower than in the draft determination. Prices in valleys other than the Murray will be higher.

In its Draft Report, the Tribunal proposed to introduce a mechanism to adjust State Water prices in the Murray valley if there are material differences between the forecast and the actual audited costs paid by the NSW government to MDBC. Because the Tribunal is basing its decision on the capped Government payment, the Tribunal does not believe that such an adjustment mechanism is required at this time.

In relation to user and National Water Commission's concerns about the lack of transparent allocation of the MDBC costs among users,[20] the Tribunal has separately identified the user share of MDBC costs allocated to each valley in Appendix 4.

4.2.3 Approach to factoring entitlements associated with conveyance licences into prices

The Tribunal's finding is that Irrigation Corporations who hold a conveyance licence should be charged for the full entitlement volume included in that licence. In addition, the full entitlement volume in the conveyance licence should be subject to the General Security charge. The Tribunal has decided to phase in this application of the conveyance licence for Murrumbidgee Irrigation and Coleambally Irrigation over the determination period.

[20] National Water Commission, 2005 National Competition Policy assessment of water reform progress, March 2006.

When water is transferred within an Irrigation Corporation, losses occur so that the amount of water measured at the river off-take is greater than the volume of water measured at the farm gate. These losses have been recognised and allowed for in different ways over time. For example, some Irrigation Corporations were granted an entitlement volume plus a loss allowance. The former represented the amount of water they could withdraw from a bulk water source to on-sell to farmers, while the latter represented an additional amount they could withdraw which was assumed would be lost in their transportation system.

Most recently, under the WMA, four of these Irrigation Corporations were issued with conveyance licences that includes an entitlement volume. This volume was based on the corporation's previous loss allowance; however, under the new licences, these corporations are entitled to on-sell the entire entitlement volume. This arrangement is intended to provide incentives for these Irrigation Corporations to improve the efficiency of their transportation systems (that is, if they reduce the amount of water they lose, they are entitled to use this water or trade this saved amount).

In its 2005 determination, the Tribunal provided for the holders of conveyance licences to be billed for their total entitlement volume. In making this decision, it assumed that the agencies had included conveyance entitlement volumes in the data they provided on total entitlement volumes which was used in price setting.

However, after the 2005 determination was released, some Irrigation Corporations raised a concern that they might be required to pay bulk water charges on their entire entitlement volume where previously they had not. There was also some confusion about whether State Water and DNR had incorporated these conveyance entitlement volumes into the data on total entitlement volumes they provided the Tribunal.

Following discussions between the Tribunal and the agencies, it was agreed that for the 2005 determination period, the agencies would not levy bulk water charges for conveyance entitlement volumes where these volumes had not previously been billed, and that the Tribunal would consider this matter further at the 2006 review. As a result of this agreement, some Irrigation Corporations' bulk water bills reflect their total entitlement volume, while others' do not.[21]

In its submission to the 2006 review, State Water argued that all Irrigation Corporations should be charged for their total conveyance entitlement volumes, and that these volumes should be taken into account in setting bulk water prices. Effectively, this also means that usage charges would all be billed at the river off-take point. State Water also proposed that a proportion of the conveyance entitlement volumes be subject to the High Security Charge, with the remainder subject to the General Security Charge.

The Tribunal considered State Water's submission and other stakeholders' views, including strong objections received from Murrumbidgee Irrigation in response to its Draft Report. It also considered the underlying rationale for establishing conveyance licences, the implications for economic efficiency and the impact on customers. In addition, it considered the information on entitlement volumes being factored into its price setting decisions.

---

21 Murray Irrigation and Jemalong Irrigation currently pay for their conveyance allowance, whereas Coleambally and Murrumbidgee do not.

The Tribunal concludes that it is necessary to charge these corporations for the total entitlement volume associated with their conveyance licence. The Tribunal believes that this means that the point of charging is the river off-take point. The reasons for the Tribunal's decision are as follows:

- This is consistent with the way all other irrigators are charged. For the Irrigation Corporations their conveyance entitlements are separately identified and classified as a separate licence category. Other irrigators, however, have a conveyance entitlement implicit in their licensed entitlement volume. These irrigators currently pay a fixed charge on their total licensed entitlement volumes and, therefore, implicitly pay a fixed charge on the component of the entitlements used for the conveyance purposes.
- Charging the corporations for the conveyance licence and billing these customers for the amount of water that enters their system provides them with an incentive to improve the efficiency of the transportation systems so as to minimize system losses.
- The conveyance licence has an entitlement volume which is of value to the irrigation corporations as it gives the corporations access to water (like the high security and general security entitlements). It is also an entitlement which can be traded and, therefore, has a substantial value. Albeit, the irrigation corporations will have to incur expenses to improve the efficiency of the transportation system to generate water savings to enable the conveyance licence (or a part of it) to be traded.

While the Tribunal believes that the corporations should pay for their conveyance licences, it recognises that Murrumbidgee Irrigation and Coleambally Irrigation Corporations have not previously paid an entitlement charge on their conveyance licences. In order to minimise the impact on these Corporations, the Tribunal has decided to phase in this change over the course of the determination period. In 2006/07 these Corporations will not be required to pay a fixed entitlement charge on the entitlement volume associated with the conveyance licence. In 2007/08 these Corporations will be required to pay a fixed entitlement charge on 33 per cent of the entitlement volume associated with the conveyance licence increasing to 67 per cent in 2008/09. By 2009/10 these Corporations will be paying for all the entitlement volumes associated with the conveyance licence.

The Tribunal also considered State Water's proposal that a proportion of conveyance entitlement volumes be subject to the High Security Charge, and the remainder be subject to the General Security Charge. It notes that the water sharing plans allocate a proportion of conveyance entitlement volumes at the High Security status and a proportion at a General Security status. The security status of the conveyance licence in total, therefore, does not provide the same level of security as a High Security licence. The Tribunal believes that it would be inappropriate to charge the conveyance licence at the rate applicable to High Security entitlements.

4.2.4 Approach to setting prices for the Fish River Water Supply Scheme

The Tribunal's decision is to support State Water's proposal to have separate prices for the Fish River Water Supply Scheme.

As Chapter 3 discussed, until 1 January 2005 the Fish River Scheme was a Government Trading Enterprise that operated as a bulk water supplier on the Fish River until it was transferred to State Water. State Water now owns and operates this scheme. In its submission, it proposed to treat the Fish River Scheme as a separate valley for pricing purposes.

The Fish River Scheme is geographically separate from State Water's other assets. Further, the Fish River Scheme is not subject to a water sharing plan, and customers do not have an entitlement similar to customers in other river valleys. While there is the possibility that the scheme will be subject to a water sharing plan (or a Macro Plan) this is not likely to occur for some time. Customers in the scheme currently have a contract with State Water to supply the water.

Given the above, the Tribunal believes State Water's proposal to maintain the scheme as a separate valley is appropriate.

4.2.5 Agencies' reporting obligations

A key issue raised by irrigators in their submission to the draft report was the need to ensure that State Water and DNR are accountable for their expenditure and activities. The Tribunal is sympathetic to irrigators' concerns and believes that there is a need to develop and publish performance indicators and measures so that stakeholders can monitor delivery of programs against forecast outputs and outcomes.

In past bulk water determinations the Tribunal has established a program of works for the agencies which outlines key issues which the Tribunal believed needed addressing prior to future determinations. For example, in the 2001 Bulk Water Determination the Tribunal encouraged the agencies to develop:

- Separate valley accounts, which would ensure the integrity of the cost database and facilitate independent auditing.
- Customer Service Committees, which would allow stakeholders to have meaningful input into how bulk water services are delivered in the valleys.

The Tribunal has discussed further with the NSW Irrigators' Council the type of information that would assist its irrigators in monitoring the performance of State Water and DNR. Irrigators' main concerns are to understand the agencies' expenditure and to have confidence in the robustness of the data being submitted by the agencies.

The Tribunal has developed an information template (presented in Appendix 8) that it expects State Water and DNR to report over the period of this determination.[22] This template represents a minimum level of reporting that the Tribunal expects from the agencies. In preparing this template the Tribunal has been conscious of irrigators requests, but also on the costs to the agencies of this reporting obligation.

22 The Tribunal anticipates publishing this information on its website following receipt from the agencies.

While the Tribunal supports improved reporting of agencies' costs it notes that purely focusing on the costs may not necessarily be conducive to encouraging efficient operations, as it would encourage agencies to mainly focus on ensuring that budgeted expenditures are met. Rather the agencies should be focussing on deliverables, ie, physical outputs and outcomes.

In the longer term the Tribunal, therefore, believes that there is a need to develop performance indicators that accurately measure the activities and outcomes of these activities, including the efficiency of operations. An extensive review is required to develop such indicators. The Tribunal anticipates that it would commence such a review as part of the review of State Water's Operating Licence due to commence in 2007.

5 RATIOS FOR SHARING COSTS BETWEEN USERS AND THE GOVERNMENT

As Chapter 3 discussed, bulk water prices are intended to recover extractive users' share of the efficient costs incurred by State Water and DNR in providing bulk water services. The remaining costs are borne by the Government on behalf of the community. This means that to set prices, the Tribunal needs to determine what proportion of the efficient costs associated with each agency's products and/or activities should be allocated to extractive users and what proportion of the MDBC and DBBRC costs should be allocated to users.

In past reviews, user shares have been subject to extensive review and consultation. For this review, the Tribunal decided to use the principles for allocating costs between users and the Government established in the 2001 determination and adopted in the 2005 determination. It also engaged CIE to review the agencies' proposals and to provide advice on appropriate ratios for cost allocation. In addition, it sought stakeholders' views on the agencies' proposed ratios and CIE's recommended ratios and received submissions on its Draft Report.

The Tribunal's findings on the allocation of costs between users and the Government for the purposes of setting bulk water prices for this determination are set out below. The subsequent sections discuss:

- the objectives and principles for allocating costs between users and the Government
- how the agencies' proposals for cost share ratios compare to those used in the 2001 determination (which were also adopted for the 2005 determination)
- CIE's review and recommendations on allocation of State Water and DNR costs
- stakeholders' comments
- the Tribunal's analysis on the appropriate cost sharing ratios.

5.1 Tribunal's findings on the ratios for allocation of costs between users and the Government

For State Water, the Tribunal's finding is that the efficient costs incurred in providing bulk water services will be allocated between users and the Government according to the ratios shown in Tables 5.1 and 5.2.

For DNR, the Tribunal's finding is that the efficient costs incurred in providing bulk water services will be allocated between users and the Government based on the ratios shown in Table 5.3.

5.2 Objectives and principles for allocating costs

The objective of allocating costs between users and the Government is to ensure, as far as possible, that extractive users and the community each pay a fair share of the efficient costs of managing the bulk water system.

For the 2001 review, the Tribunal engaged ACIL Consulting to review State Water's costs and the costs involved in water resource management (WRM) activities, and to provide a framework for allocating these costs between users and the Government. ACIL developed a conceptual framework for allocating costs that was based on an 'impactor pays' approach and which excluded 'legacy costs'. In general, the Tribunal adopted the principles that underpinned this approach.[23]

Under the framework, each agency's total costs were broken down according to the key 'products' or activities they were associated with (such as dam safety compliance and water quality monitoring). Within each of these products or activities, costs that related to past users were regarded as legacy costs[24] and were allocated fully to the Government. Future expenditure that related to current or future users was allocated according to which party (users or the community) created the costs or the need to incur the costs (impactor pays).

For this review, the Tribunal has maintained this general approach, but has reviewed the specific allocations.

5.3 Agencies' proposed cost share ratios compared to those used in the 2001 determination

Both State Water and DNR proposed changes to the cost share ratios used in the 2001 and 2005 determinations.

State Water broke down its costs into similar product cost classifications used in these determinations. However, it proposed increases in the users' share of the cost associated with four of these products – dam safety compliance operating and maintenance, hydrometric monitoring, water quality monitoring and OH&S compliance system. It argued that the compliance activities, such as managing environmental water, is part of normal business and therefore users should receive a higher allocation of costs. State Water also proposed that 100 per cent of the costs associated with the Fish River Scheme (which was not included in the 2001 determination) be allocated to users. Neither State Water nor DNR proposed separate cost share ratios for MDBC costs. In most instances, they applied their own existing product codes to these activities.

State Water's proposed user-cost share ratios compared to those used in 2001 determination are shown in Table 5.1.

---

23 One exception was that the Tribunal decided that capital expenditure compliance costs should not be allocated entirely to Government but should be shared between Government and users.

24 Legacy costs involve current and future costs that are attributable to the past that, on equity grounds, are appropriately and fully borne by government and therefore not shared with current or future users. For the purposes of implementation, the Tribunal drew a 'line in the sand' at July 1997 for assessing liability for such cost recovery.

DNR broke down its costs into 60 newly defined activities, in place of product cost classifications used in the 2001 determination. It proposed cost sharing ratios for each of these activities.

DNR's proposed cost allocation ratios are set out in Table 5.3. In its submission, DNR argued that its proposed changes are warranted due to:

- changes in some of its water resource management activities, such as protecting the security of users' entitlements, which deliver direct commercial benefits to users
- the introduction of water sharing plans and catchment action plans, which establish explicit environmental objectives for each valley
- the development of the NWI, which provides policy guidance on the implicit rights and obligations of water users with respect to the environment, and who should bear the risk of future changes in community preferences and expectations about environment quality.

5.4 CIE's review and recommendations

The Tribunal engaged CIE to recommend appropriate cost sharing ratios, building on the cost sharing principles established in the 2001 determination. CIE reviewed these principles. It also evaluated the agencies' proposed cost share ratios, and the arguments that they and other stakeholders put forward for changing the ratios used in the 2001 determination, and considered whether recent regulatory changes (such as the establishment of water sharing plans and NWI) warrant revisions to the 2001 ratios.

CIE concluded that:

> …the Tribunal's principles with respect to cost share allocations [are] appropriate and robust enough to be applied to new WRM activities, as well as the activities of the newly corporatised [State Water].[25]

For many of State Water's products/activities, CIE recommended cost share ratios that are the same as State Water's proposed ratios. However, there are some key differences:

- Within the capital expenditure category, State Water proposed that 100 per cent of OH&S costs be allocated to users, whereas CIE recommended the allocation remain at 50 per cent.
- Within the operating expenditure category, State Water proposed that 100 per cent of almost all products/activities be allocated to users. CIE recommended that for hydrometric monitoring, river operations and preventive maintenance, the users' share be reduced to between 70 and 100 per cent, and for water quality monitoring, dam safety compliance and insurance, the user share be reduced to 50 per cent.

CIE's rationale was that some of the costs associated with these products/activities are incurred to meet community expectations.

---

25 Centre for International Economics - *Review of cost sharing ratios* – Analysis in support of 2006 Bulk Water Price Review, p 23.

For DNR, CIE noted that it experienced difficulties in interpreting DNR's descriptions of its activities and therefore in identifying the impactor for some activities. It developed a protocol for deciding on the cost sharing ratios, then applied this protocol to develop ratios for each of DNR's 60 activities. For some of these activities, CIE's recommended user share was the same as DNR's proposed share, and in others it was less (see Table 5.3).

5.5 Stakeholder submissions

Stakeholders had opportunities to comment on the allocation of costs between users and the Government in their responses to the agencies' submissions, to CIE's report on its review of cost sharing ratios and to the Tribunal's Draft Report. The Tribunal received submissions from a range of irrigator groups (including NSW Irrigators' Council, Murrumbidgee Irrigation, Murrumbidgee Private Irrigators and Lachlan Valley Water, Macquarie River Food & Fibre, Namoi Water), from various conservation groups and from one individual.

State Water broadly agrees with the Tribunal's principles and approach for allocating costs and supported the findings in the Tribunal's Draft Report. DNR maintains that costs should be allocated according to it original submission. Other stakeholders requested further detail on the Tribunal's rationale, including on why its draft findings differed from CIE's recommendation. Most irrigator groups argue that WRM costs, particularly those that relate to environmental outcomes, should be fully allocated to the Government, as they provide a public benefit.

In contrast, conservation groups put the view that the impactor pays principle means that delivery and infrastructure costs associated with the management of environmental water should be included in the cost base charged to users. They argued that the costs of restoring river flows are incurred due to extraction of the water for commercial purposes, and therefore no costs related to operating or maintaining infrastructure for the impoundment or extraction of water should be paid for by the community.

Irrigator groups also highlighted the need to ensure that all users on regulated rivers pay for water stored and delivered by State Water. They argued that currently this water is used for a range of purposes other than irrigation, such as the environment, stock and domestic users, tourism and forestry, and no charges are levied for these other purposes.

There is particular concern about environmental water because increased environmental flows could mean that State Water's costs will be recovered from a lower volume of water sales, leading to higher prices. Irrigators argued that if costs of environmental compliance are allocated to users, this will further increase prices.

A number of stakeholders were critical of the lack of information on allocation of the MDBC costs between users and Government.

5.6 Tribunal's analysis and findings

The Tribunal's findings on the user-cost share ratios for State Water are shown in Tables 5.1 and 5.2. The Tribunal's findings on the user-cost share ratios for DNR are shown in Table 5.3.

The Tribunal considered CIE's recommendations, stakeholder submissions and its previous decisions on cost allocation ratios. It also analysed the effect of the cost allocation ratios on efficient costs and prices.

5.6.1 User cost shares for State Water

For State Water costs, it decided that on balance, in most cases there was insufficient reason to move away from the ratios used in the 2001 determination, and these ratios should generally be used for the 2006 determination.

The Tribunal agreed with State Water's proposal to set the users' share of costs associated with the Fish River Scheme at 100 per cent. It did not agree with State Water's proposal to increase the users' share of costs associated with dam safety compliance operating and maintenance, water quality monitoring and OH&S compliance system. It notes that CIE's advice was not to change the ratios for those products.

The Tribunal has some sympathy with State Water's arguments that the users' share of costs associated with hydrometric monitoring should be increased. State Water proposed that the ratio should be increased from 70 per cent to 100 per cent. In its Draft Report, the Tribunal accepted State Water's proposal for a ratio of 100 per cent. A number of stakeholders were strongly opposed to this draft finding, arguing that a substantial component of hydrometric activities relates to flood mitigation. The Tribunal has further considered this issue and accepts that these activities do play some role in flood mitigation. As a result, the Tribunal finds that the ratio should be 90 per cent.

The Tribunal received strong representation on the cost sharing ratio for activities associated with the Burrendong Dam. Macquarie River Food & Fibre (MRFF) has argued for a specific cost sharing ratio for activities on Burrendong Dam in recognition of the multi-purpose nature of the dam. Specifically, MRFF contends that 30 per cent of the original purpose of Burrendong dam was to provide flood mitigation and hence 30 per cent of the capital costs, operating costs, maintenance costs and upgrade costs of Burrendong Dam are incurred because of flood mitigation purposes.

The Tribunal notes that all dams in NSW arguably have some flood mitigation capacity, although it may not have been explicitly recognised in the original construction. For example, most of State Water's dams incorporate additional storage space at the top of the dam (the flood surcharge zone) which is intended to capture flood waters and control the release of these waters from the dam to minimise the peak of the flood. Approximately half of State Water's large dams have mechanised 'gates' attached to the dam wall which can be opened/closed to manage the release of water. Other dams don't have 'gates' and use the existing valves and fixed crest spillways for releasing water to meet users demands and to also release water to control flood waters.

State Water's ongoing costs of its flood mitigation activities largely relate to whether the dam has mechanised 'gates' which require the mechanical/electrical components to be maintained. However, these costs are not directly related to the proportion of the flood mitigation zone in the dam.

It should also be noted that while all the dams have additional capacity which is classified as the flood surcharge zone, this increases the overall storage capacity of the dam leading to a higher security of supply for users. The reason for this is that water stored in the flood surcharge zone can also be used to supply water for users under certain conditions, as provided for in the Water Sharing Plans for the relevant valley. Further, not all State Water's dams have gates and mechanical elements that require maintenance. Therefore, in a lot of State Water's dams there is no ongoing expenditure specifically associated with the need to also manage a dam for flood mitigation purposes.

The Tribunal agrees that some expenditure on dams is undertaken primarily to maintain flood mitigation assets (such as mechanised gates) on the dam. However, users also derive some benefit from the flood mitigation works on the dams. The Tribunal has decided part of the MPM Capital projects (3530) product can be attributed to the need to maintain flood mitigation assets. As a result, the Tribunal finds that the ratio should be reduce from 100 per cent in the draft determination to 90 per cent.

Table 5.1 shows the Tribunal's findings on the user-cost share ratios for State Water, and compares them with the ratios used in the 2001 determination, proposed by State Water and recommended by CIE.

Table 5.1 Tribunal's findings on State Water's user-cost share ratios compared to the ratios used in the 2001 determination, proposed by State Water, recommended by CIE and the Tribunal's draft finding (%)

Product	2001 IPART Determination	State Water submission	CIE recom-mendation	Tribunal's draft finding	Tribunal's finding
Capital expenditure					
Asset management planning (3110)	100	100	70–100	100	100
Plant and equipment (3160)	100	100	70–100	100	100
Dam safety compliance capital projects –pre 1997 (3520)	0	0	0	0	0
Dam safety compliance capital projects –post 1997 (3525)	50	50	0–50[a]	50	50
MPM capital projects (3530)	100	100	70–100	100	90
Structure enhancement capital projects (3540)	100	100	100[a]	100	100
OH&S compliance system (4210)	50	100	50	50	50
Fishpassage works (6310)	50	50	0	50	50
Cold water impacts mitigation works (6320)	50	50	50	50	50
Salt interception schemes (6340)	10	10	10[b]	10	10
Fish River Supply Scheme	Na	100	100	100	100
Operating expenditure					
Customer support (1120)	100	100	100	100	100
Hydrometric monitoring (2120)	70	100	70–100	100	90
Water quality monitoring (2130)	50	100	50	50	50
River operations (2150)	100	100	70–100	100	100
Dam safety compliance O&M (3130)	50	100	50	50	50
Preventative maintenance (3140)	100	100	70–100	100	100
Billing & receipts (5220)	100	100	100	100	100
Insurance (5250)	100	100	50	100	100
Metering (2180)	100	100	100	100	100
Salt interception schemes (6140)	10	10	10[b]	10	10
Fish River Supply Scheme	Na	100	100	100	100

Notes

a Depends on whether users or the community demand the upgrade. Government (on behalf of the community) would pay the additional incremental costs associated with metering community demands.

b CIE retains the recommended 10 per cent allocation assuming that it reflects legacy costs.

The Tribunal notes that CIE did not specifically consider the allocation of MDBC and DBBRC costs between users and the Government. However, the Tribunal found that where a MDBC cost could be classified according to the State Water activities/products set out in Table 5.1, the cost should be allocated in the same way as the State Water cost. Some MDBC costs could not be classified in this way as they related to other activities. The Tribunal separately assessed State Water's proposed user share ratios for these activities. Its findings on the additional MDBC activities are shown in Table 5.2.

Table 5.2 Tribunal's findings on additional MDBC activities for State Water's user-cost share ratios compared to the ratios proposed by State Water (%)

Product	State Water proposal	Tribunal's finding
Capital expenditure		
Navigation	100/50	50
OH&S (4290)	50	50
TAMP (3510)	100	100
River channel protection works (6330)	50	50
Operating expenditure		
Environmental preventative maintenance (6110)	50	50
River channel protection O&M (6130)	50	50

5.6.2 User cost shares for DNR

For DNR, the Tribunal examined the agency's new activity codes and mapped them against the product classifications used in the 2001 determination. For new activities that corresponded with a product classification, it identified the cost share ratios that applied to those activities/products in the 2001 determination. For activities for which there was no equivalent product classification, it determined what cost share ratios would have been applied based on the principles on which the 2001 determination was based and which have also been adopted for this determination.

This comparison highlighted that the overall trend in DNR's proposal is to allocate significantly more costs to users than in previous reviews. The Tribunal does not consider that the higher allocation ratios are justified based on evidence presented to it. In addition, CIE's recommendations do not support this overall trend.

Table 5.3 shows the Tribunal's findings on the user-cost share ratios for DNR, and compares them with the ratios used in the 2001 determination, proposed by DNR and recommended by CIE. The Tribunal's findings adopt the cost share ratios used in the 2001 determination where a new activity directly corresponds to a previous product codes used in the 2001 determination. Where a new activity does not correspond to a previous product code used in the 2001 determination the Tribunal has considered CIE's recommendations and the impactor pays principle established in the 2001 determination.

Table 5.3 Tribunal's findings on DNR's user-cost share ratios compared to the ratios used in the 2001 determination, proposed by DNR, recommended by CIE and the Tribunal's draft finding (%)

Activity Code	WRM activity	IPART 2001 Determination[26]	DNR submission	CIE recommendation	Tribunal's draft finding	Tribunal's finding
		%	%	%	%	%
Surface water information provision						
C01-01	Surface water quantity monitoring/reporting/information provision	70,80,0,50	90	70	70	70
C01-02	Surface water state-wide data management	0,0	90	50	50	50
C01-03	Surface water quality monitoring/reporting/information provision	50,50,0,50	63	50	50	50
C01-04	Surface water ecology/biology information provision	50	63	0	50	50
C01-05	Surface water quality state-wide database management	50,0	63	50	50	50
C01-06	Surface water asset management — for quantity/quality information provision	70,80,50,50	90	50–70	70	70
Groundwater information provision						
C02-01	Groundwater quantity monitoring/reporting/ information provision	100,100	100	70–100	100	100
C02-02	Groundwater quality monitoring/reporting/information provision	100,100	100	70–100	100	100
C02-03	Groundwater state-wide corporate database management	100	100	70–100	100	100
C02-04	Groundwater asset management — for quantity/quality information provision	100,100,100 100	100	70–100	100	100
Coastal and estuary information provision						
C03-01	Coastal and estuary monitoring and information provision	70,80,50,50	0	0	0	0
C03-02	Coastal and estuary asset management — for quantity and quality monitoring	70	0	0	0	0
Surface water and groundwater analysis						
C04-01	Analytical services for water quality programs	50	81	50	50	50
Water modelling and impact assessment						
C05-01	Water sharing/accounting projects	50,100	100	0–30	50	50
C05-02	Water assessments	0,10,100	50	0–30	30	30
C05-03	Water balances/accounting	100,100,100	100	100	100	100

[26] The 2001 determination was based on product codes; these have been "mapped" to the new WRM activities. In many cases, there was more than one product code per activity, as reflected in Table 5.2.

Activity Code	WRM activity	IPART 2001 Determination[26]	DNR submission	CIE recommendation	Tribunal's draft finding	Tribunal's finding
		%	%	%	%	%
C05-04	Groundwater balances/ accounting	100,100,100	100	100	100	100
Water Sharing Plan implementation						
C06-01	Environmental water provisions (Parts 3 & 5)	Na	100	0	0	0
C06-02	Limits to availability of water (Parts 5 & 8)	Na	100	70–100	100	100
C06-03	Rules for managing access licences (Parts 5 & 9)	Na	100	100	100	100
C06-04	Access dealing rules (Parts 5 & 10)	Na	100	100	100	100
C06-05	System operation rules (Part 12)	Na	100	100	100	100
C06-06	Monitoring and Reporting (Parts 5 & 13)	Na	100	0	50	50
C06-07	Plan amendments (Part 14)	Na	100	50	50	50
WRM planning						
C07-01	Water sharing plan development	100,100,100	100	50	70	70
C07-02	Water use plans		100	50–70	70	70
C07-03	Drainage plans		0	0	0	0
C07-04	Floodplain plans	0	0	0	0	0
C07-05	Floodplain harvesting plans	100	100	70–100	100	100
C07-06	Environmental water management planning	0	100	0	0	0
C07-07	Water savings planning		100	0	0	0
C07-08	Delivery capacity rights planning	100,100,100	100	70–100	100	100
C07-09	Wetland recovery plan major initiative	0	100	0	0	0
C07-10	NSW wetland policy implementation		80	0	0	0
C07-11	NRC reviews and support of water sharing plans		100	0	50	50
C07-12	CMA support for environmental water programs		50	0	0	0
C07-13	River health and water quality plans	0	90	0	0	0
C07-14	Impact of dams on water quality	0	0	0	0	0
C07-15	Blue-green algae operational planning	0,0,0	0	0	50	50
C07-16	Bacterial, chemical, salinity and other regional operational planning	0	0	0	0	0
C07-17	Interstate and national commitments	50	20	0	50	50
River management works (non-capital)						
C08-01	River management works planning	100	100	50	50	50
C08-02	River bank and river bed remediation	100	100	50	50	50

Activity Code	WRM activity	IPART 2001 Determination[26]	DNR submission	CIE recommendation	Tribunal's draft finding	Tribunal's finding
		%	%	%	%	%
Water consent administration						
C09-01	Head office systems administration	80,100	100	100	100	100
C09-02	Regional administration	80,100,100	100	100	100	100
C09-03	Head office register administration	100,100,100 100,100,100	100	100	100	100
C09-04	Licence cleansing	100,100	100	100	100	100
C09-05	Town water supply entitlements	100,100	100	100	100	100
C09-06	Compliance	100, 100	100	100	100	100
C09-07	Systems development		100	100	100	100
Water consent transaction						
C10-01	*Water Act 1912* consents transactions	100,100,100 100,100,100	100	100	100	100
C10-02	*Water Management Act 2000* consents transactions	100,100,100 100,100,100	100	100	100	100
Business administration						
C11-01	Metering and billing water usage	100,100	100	100	100	100
C11-02	WRM business development	100	100	70	70	70
C11-03	Financial administration	50,80	80	70–100	100	100
WRM systems capital program						
C12-01	Metering and monitoring of water use systems on unregulated rivers and groundwater	90,90	100	70	90	90
C12-02	IMEF	0	100	0	0	0
C12-03	Groundwater monitoring network for water sharing plans and extension of surveillance and salinity networks	100,100	100	70	70	70
C12-04	Integrated corporate water and ecological databases	80,50	50	30	50	50
C12-05	Water and wetland recovery management	0	100	0	0	0

The Tribunal notes that CIE did not specifically consider the allocation between users and the Government of MDBC and DBBRC costs related to water resource management. However, all MDBC and DBBRC costs could be classified according to the DNR activity codes. Accordingly, the Tribunal found that the costs should be allocated using the relevant user share ratio for the cost category/activity as set out in Table 5.3.

6 OVERVIEW OF DECISIONS ON AGENCY AND USER-SHARE REVENUE REQUIREMENTS

One of the key inputs to the Tribunal's pricing decisions is its calculation of the amount of revenue each agency needs to recover through user prices, known as the user-share revenue requirement. To calculate this amount, the Tribunal first calculated the revenue required by each agency to efficiently provide bulk water services and earn a return on its asset base. This amount is known as the agency's 'notional revenue requirement'.[27] It then allocated the amount between users and the Government by applying the cost share ratios explained in Chapter 5 to each cost category of the total notional revenue requirement.

As Chapter 4 discussed, the Tribunal used the building block method to calculate each agency's notional revenue requirements for the 2006 determination period. This method entails estimating the amount of revenue the agency needs to generate to recover its 'cost blocks', then adding these amounts together. The cost blocks include:

- Operating and maintenance expenditure. This cost block represents the Tribunal's assessment of the agency's efficient level of operating and maintenance costs associated with providing bulk water services to the required standards.
- Capital investment, which is based on two cost blocks:
  - An allowance for a return on assets. This cost block represents the Tribunal's assessment of the opportunity cost of capital invested in the agency by its owner. It is derived by multiplying the value of the agency's regulatory asset base (RAB) by an appropriate rate of return. For State Water, the Tribunal determined the initial value of its RAB at 1 July 2004. It then calculated an appropriate rate of return using the Weighted Average Cost of Capital approach to determine a range for this rate, then making a judgement about what rate within the range is most appropriate, having regard to the matters in Section 15 of the IPART Act. For DNR, the Tribunal did not made an allowance for a return on assets, given that DNR specifically did not include an allowance in its submission. This approach is consistent with its previous determinations and lower bound pricing.
  - A return of capital (depreciation). This cost block represents the Tribunal's assessment of the agency's efficient level of costs in maintaining its capital asset base. It is calculated using straight-line depreciation on the RAB.

Usually, the cost blocks also include an allowance for working capital. However, in making its determination, the Tribunal has accepted the agencies' proposals not to include such an allowance in calculating their notional revenue requirements.

The sections below provide an overview of the Tribunal's findings on the notional revenue requirement to be used in setting prices for each agency, and compare these findings to the agencies' forecast notional revenue requirements. Detailed discussion of the Tribunal's findings in relation to the revenue required to recover the individual cost blocks is provided in the following chapters. Chapter 7 explains the findings in relation to the revenue required for operating expenditure. Chapters 8 and 9 explain the findings in relation to the revenue

[27] The 'notional revenue requirement' is an input to the price setting process whereas the 'target revenue' is an output of the price setting process. The Tribunal uses the notional revenue requirement in conjunction with assumptions about each agency's metered sales (see in Chapter 10) in setting prices. It also considers the factors listed in Section 15 of the IPART Act (see Chapter 1). The target revenue is the actual revenue that the Tribunal expects the agency to recover based on the prices it has set.

required for capital investment, including those on the efficient level of forecast capital expenditure, the allowance for a return on assets, and the return of capital (depreciation).

6.1 Summary of Tribunal's findings on notional revenue requirements

The Tribunal's findings on the agencies' notional revenue requirements to be taken into account in setting prices for the 2006 determination period are set out in Table 6.1.

The agencies generate revenue from users and the Government. The Tribunal uses the user-share notional revenue requirement to determine prices. The Government pays the shortfall between the user-share and total notional revenue requirement.

The Tribunal considers that the user-share notional revenue requirements will enable each agency to recover the user-share of the efficient costs of providing the services on a sustainable basis while maintaining appropriate standards of quality, reliability and safety, and to earn a rate of return where appropriate.

Table 6.1 Tribunal's finding on agency and user-share notional revenue requirements for State Water and DNR ($ million, Real 2006/07)

Financial Year		2005/06[28]	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
State Water	Total agency	**57.6**	**77.6**	**75.6**	**75.8**	**77.4**	**306.4**
	User-share	*37.9*	*55.7*	*53.5*	*53.2*	*53.2*	215.6
DNR	Total WRM activities	**52.5**	46.9	47.0	47.6	46.2	187.7
	User-share	*34.2*	30.5	30.8	30.9	30.3	122.5

Appendix 4 breaks down State Water's and DNR's user-share notional revenue requirements by valley and by the following cost components:

- Agency operating expenditure(excluding MDBC and DBBRC costs)
- MDBC operating expenditure
- DBBRC operating expenditure
- Allowance for capital depreciation
- Allowance for return on assets.

28 Per 2005 determination.

6.2 Tribunal's findings compared with agencies' proposed notional revenue requirements

Tables 6.2 and 6.3 set out the Tribunal's findings on the notional revenue requirements and compares them with the forecast notional revenue requirements included in the agencies' submissions.[29]

In relation to State Water, the Tribunal's finding on the overall notional revenue requirement is $92.6 million (or 23.2 per cent) less than the agency's original forecast for the determination period. For DNR, it is $32.8 million (or 14.9 per cent) less than DNR's forecasts for the determination period. The Tribunal's findings reflect its views on the efficient level of operating expenditure and efficient costs of financing capital investment for each agency.

Table 6.2 Tribunal's findings on State Water's and user-share notional revenue requirements compared with the agency's forecasts ($ million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
State Water Forecast (total)					
State Water revenue requirement	92.9	98.0	102.2	105.8	398.9
Split between:					
Calculated user-share	69.9	72.2	72.7	73.4	288.2
Calculated Government-share	22.9	25.8	29.5	32.4	110.7
Tribunal draft finding					
Agency revenue requirement	75.6	74.0	76.0	78.0	303.6
Split between:					
Calculated user-share	54.0	52.4	53.0	53.4	212.7
Calculated Government-share	21.7	21.6	23.0	24.7	90.9
Tribunal finding					
Operating expenditure	54.5	51.4	50.2	48.9	205.1
Return of capital (depreciation)	2.5	2.7	3.0	3.5	11.6
Allowance for return on assets	20.7	21.4	22.6	25.0	89.7
Agency revenue requirement	77.6	75.6	75.8	77.4	306.4
Split between:					
Calculated user-share	*55.7*	*53.5*	*53.2*	*53.2*	215.6
Calculated Government-share	*22.0*	*22.0*	*22.6*	*24.2*	90.8
Difference between Tribunal's finding for revenue requirement and agency forecast	-15.2	-22.5	-26.4	-28.5	-92.6
Difference between Tribunal's finding for user share revenue requirement and agency forecast	-14.2	-18.7	-19.5	-20.2	-72.6

Notes:
1. Where appropriate, forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

[29] State Water provided a revised forecast as part of its submission to the Draft Report. The table shows State Water's original forecast.

Table 6.3 Tribunal's findings on DNR's and user-share notional revenue requirements compared with the agency's forecasts ($ million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
DNR Forecast (total)					
Operating expenditure	53.1	53.8	53.8	52.2	212.9
Return of capital (depreciation)	1.8	1.9	1.9	2.0	7.5
DNR revenue requirement	54.9	55.7	55.7	54.2	220.4
Split between:					-
Calculated user-share	46.7	48.1	48.0	47.4	190.1
Calculated Government-share	8.2	7.6	7.7	6.8	30.3
Tribunal draft finding					
Agency revenue requirement	48.5	48.8	49.1	46.9	193.2
Split between:					-
Calculated user-share	31.9	32.3	32.2	31.3	127.6
Calculated Government-share	16.6	16.5	16.9	15.6	65.6
Tribunal finding					
Operating expenditure	46.1	46.2	46.7	45.3	184.4
Return of capital (depreciation)	0.8	0.8	0.8	0.9	3.3
Agency revenue requirement	46.9	47.0	47.6	46.2	187.7
Split between:					-
Calculated user-share	30.5	30.8	30.9	30.3	122.5
Calculated Government-share	16.4	16.2	16.7	15.8	65.2
Difference between Tribunal's finding for revenue requirement and agency forecast	*-8.0*	*-8.6*	*-8.1*	*-8.0*	*-32.8*
Difference between Tribunal's finding for user share revenue requirement and agency forecast	*-16.2*	*-17.3*	*-17.1*	*-17.1*	*-67.6*

Notes:
1. Where appropriate, forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.
3. DNR's forecast cost are lower than in the draft report because they were provided in 2005/06 prices by DNR rather than in 2004/05 prices as understood by the Tribunal at the time of the draft report.

The differences between the agencies' forecasts and the Tribunal's findings on agency and users-share notional revenue requirements are primarily due to the Tribunal's decisions to:

- For State Water:
  - Have a lower opening RAB compared to that sought by State Water.
  - Allow for return on assets based on a WACC of 6.5 per cent, compared with State Water's 7.0 per cent.
- For both agencies:
  - Establish lower levels of operating expenditure to reflect the Tribunal's assessment of the efficient levels.
  - Change the cost sharing ratios compared to that sought by the agencies.
  - Allow a lower level of total MDBC costs than originally proposed, a lower user share of costs and, for State Water share of MDBC costs, apply an efficiency factor of 1.25 per cent per year (cumulative) to those costs.

6.3 Breakdown of user-share notional revenue requirement by valley

Table 6.4 shows the Tribunal's findings on the user-share notional revenue requirement for State Water and DNR broken down by valley.

These notional revenue requirements for State Water and DNR are a result of the Tribunal's valley-specific decisions on each agencies cost building blocks. A breakdown of the Tribunal's valley-specific decisions is contained in Appendix 4.

Table 6.4 Tribunal's findings on the State Water's user-share notional revenue requirements by valley ($ million, Real 2006/07)

Region/river valley	2005/06[30]	2006 determination period				
		2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
State Water						
Border	1.4	2.6	2.1	2.1	2.1	8.9
Gwydir	2.9	4.4	4.2	4.2	4.2	17.0
Namoi	3.0	4.6	4.3	4.4	4.5	17.8
Peel	0.8	1.3	1.2	1.2	1.3	5.1
Lachlan	4.3	5.2	5.0	4.9	4.9	20.0
Macquarie	3.7	5.1	4.9	4.8	4.9	19.8
Far West						
Murray	10.0	10.3	10.2	10.2	10.2	40.9
Murrumbidgee	8.0	9.4	9.0	9.0	9.0	36.3
North Coast	0.4	0.9	0.8	0.8	0.8	3.3
Hunter	3.2	4.4	4.1	4.1	4.0	16.6
South Coast	0.4	0.8	0.8	0.8	0.8	3.1
Fish River Scheme	n/a	6.8	6.7	6.6	6.6	26.8
Total	**37.9**	**55.7**	**53.5**	**53.2**	**53.2**	**215.6**

Note: Totals may not add due to rounding.

30 Per 2005 determination.

State Water's user-share notional revenue requirement has increased in all valleys from 2005/06 to 2006/07. These movements largely reflect the changes in the efficient operating and capital costs in each valley determined by the Tribunal in these two years, as discussed in Chapters 7 and 8.

The Tribunal also notes that, in 2005/06, the Fish River Scheme was not included in the notional revenue requirement for State Water.

In most valleys, State Water's user-share notional revenue requirement remains relatively constant throughout the period of the 2006 determination period. This reflects the Tribunal's finding on the operating expenditure efficiencies, as discussed in Chapter 7.

For DNR's regulated rivers, the user-share notional revenue requirement has declined in a number of valleys from 2005/06 to 2006/07, and increased in others. The overall revenue requirement has declined slightly. From 2006/07 to 2009/10 the user-share notional revenue requirement remains relatively constant in real terms, although there is some variation from year to year between valleys.

For unregulated rivers and groundwater, the Tribunal's findings will result in a lower total user-share notional revenue requirement compared to 2005/06. The notional revenue requirements for 2006/07 to 2009/10 increases slightly for unregulated rivers and decreases slightly for groundwater. Expenditure in some valleys varies more from year to year than in other valleys.

Table 6.5 Tribunal's findings on DNR's user-share notional revenue requirements by valley ($million, Real 2006/07)

Region/river valley	2005/06[31]	2006 determination period				
		2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Regulated Rivers						
Border	0.8	0.7	0.6	0.6	0.6	2.6
Gwydir	0.9	0.6	0.6	0.6	0.6	2.5
Namoi	1.0	0.6	0.6	0.6	0.6	2.4
Peel	0.2	0.2	0.1	0.1	0.1	0.4
Lachlan	1.1	0.8	1.0	1.0	0.9	3.7
Macquarie	0.9	0.9	1.2	1.1	1.1	4.3
Far West	-	-	-	-	-	-
Murray	3.1	3.6	3.5	3.6	3.5	14.2
Murrumbidgee	2.4	3.0	2.9	2.8	3.1	11.8
North Coast	0.1	0.3	0.2	0.3	0.2	1.0
Hunter	1.6	0.4	0.4	0.4	0.4	1.5
South Coast	0.1	0.1	0.1	0.1	0.1	0.3
Total	**12.1**	**11.1**	**11.3**	**11.2**	**11.2**	**44.7**
Unregulated Rivers						
Border	0.2	0.2	0.2	0.2	0.2	0.7
Gwydir	0.1	0.2	0.2	0.2	0.2	0.6
Namoi	0.5	0.2	0.2	0.2	0.2	0.7
Peel	0.1	0.0	0.0	0.0	0.0	0.2
Lachlan	0.4	0.4	0.5	0.5	0.5	2.0
Macquarie	0.7	0.4	0.5	0.5	0.5	1.9
Far West	1.4	1.4	1.4	1.4	1.4	5.5
Murray	0.3	0.3	0.3	0.3	0.3	1.3
Murrumbidgee	0.5	0.4	0.4	0.8	0.4	1.9
North Coast	2.9	2.0	2.0	2.1	2.1	8.1
Hunter	1.3	1.1	1.0	1.0	1.0	4.1
South Coast	3.2	2.9	3.0	3.0	3.0	11.8
Total	**11.6**	**9.4**	**9.6**	**10.2**	**9.8**	**38.9**
Groundwater						
Border	0.1	0.4	0.3	0.3	0.4	1.4
Gwydir	0.4	0.6	0.6	0.6	0.6	2.6
Namoi	1.7	0.8	0.9	0.9	0.9	3.5
Peel	0.4	0.2	0.2	0.2	0.2	1.0
Lachlan	0.9	1.2	1.2	1.0	1.0	4.4
Macquarie	0.9	1.6	1.5	1.4	1.4	5.9
Far West	1.3	0.8	0.6	0.5	0.5	2.4
Murray	0.9	1.1	1.0	1.0	1.0	4.2
Murrumbidgee	1.7	0.9	0.9	0.9	0.9	3.6
North Coast	0.6	0.9	0.9	1.0	1.0	3.8
Hunter	0.6	0.8	0.7	0.7	0.7	3.0
South Coast	1.0	0.8	0.8	0.8	0.8	3.2
Total	**10.6**	**10.1**	**9.9**	**9.5**	**9.4**	**38.9**

Note: Totals may not add due to rounding.

31 Per 2005 determination.

7 REVENUE REQUIRED FOR OPERATING EXPENDITURE

To determine the notional revenue required for operating expenditure, the Tribunal assessed each agency's forecast operating and maintenance expenditure and determined the efficient level of operating and maintenance costs each will incur in providing bulk water services over the determination period. State Water's operating expenditure comprises the costs that it directly incurs in undertaking its river operation activities, including costs for the Fish River Scheme, and its share of the MDBC and DBRRC costs passed through by the Government. DNR's operating expenditure comprises the costs that it directly incurs in undertaking its water resource management activities and its share of the MDBC and DBRRC costs passed through by the Government.

As part of its assessment, the Tribunal engaged a consultant, PB Associates, to (among other things) review the agencies' forecast operating expenditure (excluding MDBC and DBRRC costs) and recommend the efficient level for this expenditure. It also invited stakeholders to comment on the agencies' forecasts and on PB Associates' review and recommendations. In addition, the Tribunal engaged another consultant, Halcrow/MMA, to review PB Associates' recommendations and to consider stakeholders' submissions. The Tribunal subsequently engaged Halcrow to review State Water's amended operating expenditure following the draft report.

The Tribunal's finding on operating expenditure is summarised in the section below. The following sections discuss:

- the agencies' forecast operating expenditure
- PB Associates' review and recommendations on these forecasts
- stakeholders' submissions on the agencies' forecasts and PB Associates' review
- Halcrow/MMA's review and recommendations
- the Tribunal's analysis and findings in relation to each agency.

7.1 Summary of Tribunal's findings on operating expenditure

The Tribunal's finding is that the operating expenditures used to calculate the total notional revenue requirement for each agency will be those shown in Table 7.1. It considers that these operating expenditures represent the efficient level of operating and maintenance costs associated with the agencies providing bulk water services over the 2006 determination period.

Table 7.1 Tribunal's finding on the notional revenue required for operating expenditure (including the Fish River Scheme, MDBC and DBBRC) ($million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
State Water	**54.5**	**51.4**	**50.2**	**48.9**	**205.1**
Calculated user-share	44.3	41.6	40.8	40.3	167.0
Calculated Government-share	10.1	9.9	9.4	8.7	38.1
DNR	**46.1**	**46.2**	**46.7**	**45.3**	**184.4**
Calculated user-share	30.0	30.3	30.3	29.8	120.4
Calculated Government-share	16.1	15.9	16.4	15.5	64.0

Note: Totals may not add due to rounding.

The findings on the revenue required for operating expenditure for each valley, and broken down according to core agency operating expenditure, MDBC costs and DBBRC costs, are set out in Appendix 4.[32]

7.2 Agencies' forecast operating expenditure

7.2.1 State Water

Following the release of the draft determination, State Water submitted revised forecast total operating costs of $162.3 million over the determination period, of which $147.2 million is the user share (Table 7.2).[33] This forecast is based on the agency's operational needs as set out in the water sharing plans and determined in its Total Asset Management Plan (TAMP) and reflects subsequent changes to its accounting policy from its original submission.

Table 7.2 State Water's forecast operating expenditure including Fish River (excluding costs associated with the MDBC and DBBRC) ($million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
Calculated user-share	37.5	37.7	36.6	35.5	147.2
Calculated Government-share	3.7	3.9	3.8	3.7	15.2
Total	**41.2**	**41.6**	**40.4**	**39.2**	**162.3**

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

32 DNR's expenditure for each valley set out in Appendix 4 includes operating costs and depreciation.

33 This includes the costs of Jemalong Weir which State Water proposes should be shared across all users in the Lachlan Valley.

In its response to the Draft Report, State Water disputed some of the adjustments made by Halcrow/MMA, particularly in relation to adjustments to the level of overheads. State Water also proposed substantial revisions to State Water's cost base and proposed a range of adjustments to the draft decision totalling $8.713 million ($ real, 2005/06)

- an additional $2.175 million to provide for the Fish River Water Supply Scheme full year costs
- an additional $0.14 million for customer support to allow for the Community Consultative Committee establishment, undertake the 2006 Customer Survey, implement complaints handling system, EWON disputes resolution and continued Customer Service Committee involvement
- an additional $1.0 million in 2006/07 for water quality monitoring, to allow for the costs of laboratory testing of water samples currently met by DNR and some extension to water quality testing regime. The amount requested to $1.4 million in 2007/08 and later years.
- an additional amount of $1.034 million for river operations which State Water had previously incorrectly classified as an overhead cost
- an additional $0.264 million for dam safety compliance O&M
- an additional $4.1 million for changes due to its accounting policy including:
  - $1 million capitalisation policy adjustments for major periodic maintenance resulting from an increase in the threshold for expenditure to be capitalised for dams and river structures
  - $1.6 million due to revised treatment of TAMP expenditure which will no longer be capitalised due to the recurring nature of this expenditure
  - $1.5 million for initial investigation and research costs on capital works projects required to be expensed as incurred in adopting the International Financial Reporting Standards (IFRS).

7.2.2 DNR

In its submission, DNR forecast total operating expenditure of $212.9 million over the determination period, of which $183.6 million is the user-share (Table 7.3).

Table 7.3 DNR's forecast operating expenditure ($million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
Calculated user-share	45.2	46.5	46.3	45.7	183.6
Calculated Government-share	8.0	7.3	7.5	6.5	29.3
Total	**53.1**	**53.8**	**53.8**	**52.2**	**212.9**

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

DNR has not revised its forecast operating expenditure since the Draft Report. However, it advised after the release of the Draft Report that the forecasts it submitted to the Tribunal were in 2005/06 dollars rather than 2004/05 dollars. The Tribunal has adjusted its forecasts to reflect the amendment.

DNR's forecast operating expenditure for 2006/07 is approximately $4 million higher than the level of expenditure assumed in the Tribunal's 2005 determination (based on inflating the 2001/02 efficient cost base determined by the Tribunal). According to the agency, this increase is due to the implementation of new provisions under the WMA, particularly the provisions relating to the water sharing plans, and the need to meet new obligations under the NWI. DNR argued that water users now have more secure property rights under the new arrangements, and significant effort is required to ensure that these rights are maintained/protected.

Most of the forecast increase in operating expenditure is associated with assigning additional DNR staff (71 FTE) to its WRM functions. This represents six additional staff per region, compared to 2004/05.

At the time of the Draft Report, the Government had announced the restructure of DNR.[34] This restructure involves some reductions in staffing levels and the relocation to Orange. In its original submission, DNR had not assessed how the restructure would affect the costs of DNR's water resource management activities. Therefore, the Draft Report did not take account of the impact, if any of restructuring. Subsequent to the Draft Report, DNR confirmed that the restructure will not affect its forecast operating expenditure.

7.3 PB Associates' review and recommendations

PB Associates evaluated the efficiency of each agency's forecast operating expenditure by:

- identifying the major cost drivers and determining the efficient cost levels for future years
- completing a retrospective review of each agency's operating expenditure to reflect efficient and prudent expenditure
- assessing the future operating costs of each agency to be factored into the notional revenue requirement.

PB Associates' findings and recommendations for each agency are summarised below. The full report[35] can be found on the IPART website.

7.3.1 State Water

Based on its review of State Water's forecast operating costs, PB Associates supported the findings of the Tribunal's consultant for the 2005 price review, Marsden Jacobs Associates/Cardno, who concluded that State Water's financial systems were not sufficiently developed to provide it with an accurate and robust forecast of costs.

PB Associates also found that there was insufficient justification for the significant increases in State Water's forecast operating expenditure compared to its 2004/05 expenditure. It was not satisfied that there is adequate linkage between the planned programs, the targets to be achieved, and the associated costs.

34 Minister for Primary Industry and Minister for Natural Resources, Media Release, 12 May 2006.

35 PB Associates, *Review of Capital and Operating Expenditure of the Department of Natural Resources*, 10 March 2006.

PB Associates recommended a level of operating expenditure based on a reasonable trend from historical levels, taking into consideration expected uncertainties in relation to the programs presently planned to reduce operating expenditure and the agency's ability to deliver on its planned capital expenditure program that are expected to impact on future maintenance requirements. This recommended level of expenditure is shown in Table 7.6 below.

In relation to forecast operating expenditure for each valley, PB Associates noted that State Water has forecast this expenditure to generally remain at 2005/06 levels during 2006/07 and 2007/08, then decrease by 3 per cent in 2008/09 and 2009/10. It recommended that this expenditure be based on a progression from historical levels, taking into consideration expected uncertainties in reducing costs and the impact of capital deliverability on future maintenance requirements.

7.3.2 DNR

PB Associates noted that DNR has forecast significant increases in operating expenditure during the 2006 determination period compared to historical levels. The average annual forecast expenditure for this period is $53.4 million ($ real 2005/06), compared to average annual actual expenditure of $46.1 million ($ real 2005/06) for the period 2001/02 to 2005/06, including depreciation, MDBC and DBBRC costs. This represents an average increase of around 16 per cent. In the 2005 determination, the Tribunal allowed for operating expenditure to increase in line with the movement in the CPI, resulting in forecast expenditure of $50.8 million ($ Real 2005/06 and including depreciation)

PB Associates concluded that the links between DNR's forecast operating expenditure and the planned activities listed in its submission were not sufficiently well-defined to allow it to make an assessment of the efficiency of the forecast expenditure on these activities. In particular, PB Associates expressed concern that:

- DNR has not sufficiently demonstrated how efficiency and productivity gains have been factored into forecast expenditure.
- DNR needs to undertake options analysis for delivery of services, including testing contestability of many tasks and services provided.
- DNR needs to undertake a risk-based analysis, including price service negotiations with stakeholders to determine willingness to pay for specified levels of service and timing of the provision of these services.

For these reasons, PB Associates recommended the DNR's efficient level of operating expenditure be less that the agency's forecast operating expenditure as shown in Table 7.11 below.

7.4 Stakeholder submissions

In general, stakeholders who commented on the agencies' forecast expenditures and PB Associates' review of these expenditures did not differentiate between operating and capital expenditure, but rather expressed views that related to both types of expenditure.

Of the few stakeholders who commented on State Water's and DNR's forecast expenditure, most noted that there was insufficient information in the agencies' submissions for them to

make a judgement on the prudence and efficiency of these expenditures and that they were relying on the Tribunal's consultants to make this judgement.

Some irrigator groups also disagreed with the agencies' view that the introduction of the NWI and water sharing plans has led to significant increases in agency costs. Some also expressed concern that the agencies' expenditure forecasts might include costs associated with activities that are funded through other programs, although they did not provide sufficient information for the Tribunal to assess this potential duplication.

State Water, DNR, and a range of other stakeholders[36] made submissions in response to PB Associates' review and recommendations:

- State Water stated that while it accepts that the information provided to PB Associates may have been inadequate for the consultant to draw definitive conclusions, it could not understand the logic behind PB Associates' recommended reductions in its forecast operating and capital expenditures.
- DNR argued that most of the services it provides are prescribed/mandated by government policy and that it does not have much input into determining costs.
- Many stakeholders, including Murray Irrigation Ltd, Murrumbidgee Irrigation Corporation, NSW Irrigators' Council and Gwydir Valley Irrigators Association expressed concern about the credibility of the PB Associates' analysis, particularly as a basis for setting prices. There was criticism of the lack of support PB Associates provided for its recommendations and the lack of quantifiable analysis.
- Other stakeholders, including Murrumbidgee Irrigation and Lachlan Valley Water agreed with PB Associates' view that the information provided by the agencies was not adequate to justify their proposed increases in expenditure.

7.5 Halcrow/MMA's reviews and recommendations

The Tribunal initially engaged Halcrow/MMA to review PB Associates' recommendations and to consider stakeholders' submissions in relation to State Water and DNR.

Following submissions on its Draft Report, the Tribunal engaged Halcrow to review State Water's revised submission and to provide recommendations to the Tribunal.

7.5.1 Review of PB report and initial submissions

Halcrow/MMA reviewed the final report prepared by PB Associates to identify any issues arising from its report, for example, where recommendations on appropriate levels of expenditure could not be made due to a lack of information. This process involved identifying any data gaps, and then seeking to fill these data gaps in consultation with the agencies and the Tribunal.

At the Tribunal's request, Halcrow/MMA reviewed the comments made on the PB Associates' report by key stakeholders. Halcrow/MMA also consulted with the New South Wales Irrigators' Council and Murray Irrigation Limited.

[36] Including the NSW Irrigators' Council, Murray Irrigation Corporation, Murray Irrigation Ltd, Murrumbidgee Private Irrigators, Gwydir Valley Irrigators Association and Cotton Australia, and one individual.

After assessing PB Associates' review and recommendations, and stakeholders' responses to this review, Halcrow/MMA developed its own recommendations on the efficient level of forecast operating expenditure for each agency. For State Water, their approach was to:

- determine a baseline operating expenditure over the period 2002/03 to 2003/04, prior to corporatisation
- adjust this baseline to take into account justifiable changes from this baseline to 2004/05 and then to 2005/06, including new functions since corporatisation. In doing so, Halcrow/MMA took into account State Water's increased responsibilities under the NWI and dam safety regulations.

Halcrow/MMA then considered the proposed changes between 2005/06 and 2006/07 and allowed for justifiable increases. They then made adjustments to reflect a reduction to overhead allocation transitioning from 20 per cent in 2006/07 to 15 per cent from 2007/08 onwards, a slight increase in the major periodic maintenance budget and State Water's proposed efficiency gains of 3 per cent per annum beginning in 2007/08.

For DNR, Halcrow/MMA recommended that the efficient level of forecast operating expenditure be based on the maximum staffing numbers over the period 2001/02 to 2004/05 of 274 FTEs. They note that DNR has been able to fulfil its commitments under COAG with this level of FTEs. Halcrow/MMA adjusted this baseline to reflect an efficient level of overhead costs, and remove the costs of some functions that it believes should be conducted by the Catchment Management Authorities and other functions that it believes will not be required in later years once the water sharing plans are in place.

7.5.2 Final report and recommendation for State Water

As noted above, State Water had submitted revised cost forecasts to the Tribunal. The Tribunal engaged Halcrow to review State Water's revised forecast expenditure. As a result of its review, Halcrow concluded that its previous recommendations should be adjusted. Table 7.4 shows Halcrow's adjustments to its previous recommendations (which were set out in the Draft Report) for State Water.

Table 7.4 Halcrow's recommended adjustments to State Water's operating expenditure ($million, Real 2006/07)

	Halcrow's proposal	Rationale
2005/06 base line		
Adjustment for Fish River Scheme	2.0	Halcrow accepts that the 2005/06 baseline operating expenditure be increased to correct for an error in its previous calculations
Customer support	0.1	Halcrow allowed some 'new' expenditure, not previously incurred by State Water
2006/07 forecast		
Water Quality Monitoring	0.3	Halcrow allowed some additional expenditure to reflect once off expansion of databases and reviewing its existing testing regimes
River Operations	1.0	Halcrow agreed with State Water that a proportion of the costs were previously incorrectly classified (by State Water) as overheads and are more correctly treated as river operations. A corresponding adjustment will need to be made to the overhead allowance
Dam Safety Ops and Maintenance	-	State Water has now indicated that it is prepared to accept Halcrow's original findings
Impact of accounting adjustments	4.2	Halcrow accepts these adjustments as they reflect the International Financial Reporting Standards verified by KPMG
		Halcrow has qualified its support for these adjustments and notes that they have not been independently audited.

In addition to the above adjustments, Halcrow's final recommendation confirmed its draft recommendation to:

- adjust overheads from an average 22.5 per cent on the total operating expenditure (excluding MDBC and DBBRC) to 20 per cent in 2006/07 and 15 per cent thereafter
- include an annual 3 per cent efficiency gain from 2008/09 onwards.

Halcrow's revised recommendation on efficient operating costs is shown in Table 7.6 below.

7.6 Tribunal's analysis and findings on State Water's efficient forecast operating expenditure

The Tribunal considered State Water's forecast operating expenditure, the recommendations of its consultants in relation to this expenditure, and stakeholder views, taking into account the factors set out in Section 15 of the IPART Act. Its analysis and findings on the efficient level of forecast operating expenditure (excluding MDBC and DBBRC costs) and of forecast MDBC and DBBRC operating costs are outlined below. The overall effect of these findings is also discussed.

7.6.1 Efficient level of forecast operating expenditure (excluding MDBC and DBBRC costs)

The Tribunal's finding is to adopt the level of forecast operating expenditure (excluding MDBC and DBBRC costs) for State Water presented in Table 7.6 below.

In deciding whether to adopt State Water's operating expenditure forecasts, the Tribunal considered the reasons given for the significant increases over the 2006 determination period above 2005/06, the recommendations made by its consultants and its analysis. The Tribunal believes that State Water's forecast do not represent an efficient level for the purposes of price setting. Its consultants also expressed this view.

The Tribunal considered how to establish the efficient level of operating costs. On balance, the Tribunal believes that the approach adopted by Halcrow/MMA is a reasonable basis for determining the level of efficient costs as it builds on actual costs and justifiable increases. The Tribunal has adopted the first five of Halcrow's recommended adjustments to State Water's revised forecasts shown in Table 7.4 and its proposed adjustments for overheads and efficiency gains.

However, in relation to the accounting adjustment, it has not been possible to verify the quantum of the adjustments proposed by State Water. The Tribunal notes that although KPMG and Halcrow have supported the accounting adjustments in principle, State Water has not been able to substantiate the proposed adjustments. For example, the Tribunal notes that the size of the adjustments will depend on the size and nature of the capital works program. Given this uncertainty, the Tribunal has not accepted State Water's proposed adjustments to operating expenditure to reflect the revised capitalisation policies. Instead, the Tribunal has adopted the following approach in relation to the proposed adjustments:

- The proposed opex adjustment of approximately $4.2 million has been reduced to reflect the Tribunal's decision on capital expenditure. This capital expenditure profile is approximately 28 per cent lower than that adopted by the Tribunal in the draft determination. Therefore, the $4.2 million should be reduced by approximately 28 per cent.
- The Tribunal has only allowed 70 per cent of this revised amount into operating expenditure, with the balance allocated to capital expenditure. This is in recognition of the fact that the Tribunal has not been able to independently test the accuracy of State Water's claims and how this expenditure should be allocated between operating and capital expenditure.

The Tribunal's treatment of State Water's proposed adjustments to operating expenditure are presented in Table 7.5.

Table 7.5 Treatment of State Water's proposed adjustment to opex to take account of the revised capitalisation policies

$'000, 2006/07 dollars	2006/07	2007/08	2008/09	2009/10	Total
Increase to opex proposed by State Water	4.2	4.2	4.1	4.0	**16.6**
less adjustment to reflect lower capex adopted by Tribunal	-1.2	-1.2	-1.2	-1.1	**-4.7**
Revised expenditure	**3.0**	**3.0**	**2.9**	**2.8**	**11.8**
Tribunal's approved					
- Adjustment to opex	**2.1**	**2.1**	**2.1**	**2.0**	**8.3**
- Adjustment to capex	**0.9**	**0.9**	**0.9**	**0.9**	**3.5**

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

The Tribunal's finding on the level of efficient operating expenditure, compared to Halcrow's original and revised recommendations and State Water's original and revised forecasts, is shown in Table 7.6.

Table 7.6 Tribunal's findings on levels of efficient operating expenditure including Fish River (excluding MDBC and DBBRC costs) for State Water ($ million, Real 2006/07)

	2006/07	2007/08	2008/09	2009/10	Total
State Water original forecast	38.0	38.0	36.8	35.7	148.4
PB Associates recommendation	29.0	29.6	30.1	30.7	119.4
Halcrow/MMA original recommendation	31.3	28.7	28.0	27.2	115.2
Tribunal draft finding	**31.3**	**28.7**	**28.0**	**27.2**	**115.2**
State Water revised forecast	41.2	41.6	40.4	39.2	162.3
Halcrow/MMA revised recommendation	39.8	37.4	36.3	35.2	148.7
Tribunal finding	**37.7**	**35.3**	**34.2**	**33.2**	**140.4**
Calculated user-share	*34.6*	*32.4*	*31.8*	*31.3*	*130.1*
Calculated Government-share	*3.0*	*2.9*	*2.5*	*1.9*	*10.3*

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.
3. PB Associates recommendation excludes costs associated with the Fish River Scheme.
4. Halcrow/MMA's recommendation includes costs associated with the Fish River Scheme.

7.6.2 Level of forecast MDBC and DBBRC operating expenditure

The Tribunal's finding on State Water's level of forecast MDBC and DBBRC costs is to adopt the costs set out in Table 7.8.

The MDBC and DBBRC costs recovered through State Water relate to river operations activities. The water resource management costs are recovered through DNR. Natural resource management costs other than Water Resource Management costs are funded by government.

As set out in Chapter 4, the Tribunal does not agree with State Water's proposed approach to calculating the forecast capital component of the expenditures associated with MDBC and DBBRC using a notional RAB. Additionally, because of widespread concern about the level of costs and the potential for prices to reflect a higher level of costs than actually paid, the Tribunal considers that the forecast MDBC costs should be based on the 2006/07 NSW Treasury budget figures.

The NSW Treasury budget amounts cover MDBC's river operations, natural resource management and water resource management costs. For State Water, only river operations costs are relevant. Therefore, as a first step the Tribunal needed to consider the split of the total budget amounts, taking account of information provided by State Water, DNR and MDBC (River Murray Water business unit).

Table 7.7 sets out the total NSW Treasury budget amounts for MDBC costs and the implied river operation component compared to the forecast provided by MDBC for River Murray Water.

Table 7.7 Forecast total and river operations component of MDBC costs ($million, Real 2006/07)

	2006/07	2007/08	2008/09	2009/10	Total
Total MDBC					
Total MDBC costs to be paid by NSW	26.3	26.3	26.3	26.3	105.2
DNR estimate	10.7	10.7	10.7	10.7	42.8
Implied budget for river operations costs	15.6	15.6	15.6	15.6	62.4

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

The Tribunal's finding is to calculate the allowance for State Water's MDBC costs for 2006/07 by deducting the DNR amounts from the budget. This finding should ensure that users do not pay more than the actual costs paid by NSW government.

The Tribunal notes concerns about the need for cost efficiencies to be realised in delivery of MDBC's services. The Tribunal believes that the NSW Government as a signatory to the Murray Darling Basin Agreement should seek a review of the efficiency of the MDBC, especially in the areas of river operations. In recognition that there may be scope for efficiency gains, it has applied an efficiency factor of 1.25 per cent per annum to the MDBC costs related to river operations (ie, those paid for through State Water charges). The

Tribunal considers that these potential efficiency gains should be reflected in charges paid by irrigators.

Table 7.8 shows the Tribunal's findings on MDBC and DBBRC costs for State Water. As shown in the table, given the relatively low level of forecast DBBRC costs, the Tribunal decided to accept State Water's forecasts of these costs.

The Tribunal's findings on the allocation of these costs to users are discussed in Chapter 5. The basis of allocating the user share of costs to valleys is set out in Appendix 7. The allocation of the user share to valleys is shown in Appendix 4.

Table 7.8 Tribunal's finding on State Water's level of forecast MDBC and DBBRC operating expenditure ($million, Real 2006/07)

	2006/07	2007/08	2008/09	2009/10	Total
MDBC					
Original State Water forecast (opex + capex)	30.9	28.1	24.8	21.4	105.3
Tribunal draft finding	**18.8**	**18.1**	**18.1**	**18.0**	**73.0**
Tribunal finding	**15.6**	**15.4**	**15.2**	**15.0**	**61.3**
Calculated user-share	*8.7*	*8.6*	*8.4*	*8.3*	*34.0*
Calculated Government-share	*7.0*	*6.9*	*6.8*	*6.7*	*27.3*
DBRRC					
State Water forecast	1.2	0.7	0.7	0.7	3.3
Tribunal draft finding	**1.2**	**0.7**	**0.7**	**0.7**	**3.3**
Tribunal finding	**1.2**	**0.7**	**0.7**	**0.7**	**3.3**
Calculated user-share	*1.0*	*0.6*	*0.6*	*0.6*	*2.9*
Calculated Government-share	*0.1*	*0.1*	*0.1*	*0.1*	*0.5*

Notes:
1. Where appropriate, agency forecasts and the Tribunal finding have been converted to 2006/07$.
2. Totals may not add due to rounding.

7.6.3 Overall effect of Tribunal's findings on State Water's forecast operating expenditure

The net effect of the Tribunal's findings is that the efficient level of forecast operating expenditure used in calculating the State Water's notional revenue requirement for the 2006 determination period is $205.1 million. This amount is $13.5 million or 7 per cent more than the Tribunal's draft finding forecast operating expenditure (see Table 7.9). The increase in operating expenditure is primarily due to the increase in State Water's revised forecasts to take account of its revised capitalisation policy.

Table 7.9 Tribunal's findings on State Water's forecast operating expenditure compared with the agency's forecast and consultants' recommendations ($million, Real 2006/07)

	2006/07	2007/08	2008/09	2009/10	Total
State Water forecast (includes MDBC and DBBRC)	48.2	48.5	47.3	46.2	190.3
State Water forecast (excludes MDBC and DBBRC)	38.0	38.0	36.8	35.7	148.4
PB Associates recommendation (excludes Fish River Scheme, MDBC and DBBRC)	29.0	29.6	30.1	30.7	119.4
Halcrow/MMA recommendation (excludes MDBC and DBBRC)	31.3	28.7	28.0	27.2	115.2
Tribunal draft finding (excluding MDBC and DBBRC)	**31.3**	**28.7**	**28.0**	**27.2**	**115.2**
MDBC and DBBRC cost pass through	20.0	18.8	18.8	18.8	76.3
Tribunal draft finding (total)	**51.2**	**47.5**	**46.8**	**46.0**	**191.6**
State Water revised forecast (excludes MDBC and DBBRC)	41.2	41.6	40.4	39.2	162.3
Halcrow/MMA recommendation (excludes MDBC and DBBRC)	39.8	37.4	36.3	35.2	148.7
Tribunal finding (excluding MDBC and DBBRC)	37.7	35.3	34.2	33.2	140.4
MDBC and DBBRC cost pass through	16.8	16.2	16.0	15.8	64.7
Tribunal finding (total)	**54.5**	**51.4**	**50.2**	**48.9**	**205.1**
Calculated user-share	*44.3*	*41.6*	*40.8*	*40.3*	*167.0*
Calculated Government-share	*10.1*	*9.9*	*9.4*	*8.7*	*38.1*

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

7.6.4 Valley based effect of Tribunal's findings on State Water's forecast operating expenditure

The effect of the Tribunal's findings on State Water's efficient operating expenditure differs between valleys. A comparison of the Tribunal's draft and final findings is shown in Table 7.10.

Table 7.10 Tribunal's findings on State Water's forecast operating expenditure by valley over the period 2006/07 – 2009/10 compared to the draft determination ($ million, Real 2006/07)

	Draft decision			Final decision		
Valley	**Tribunal draft finding (excluding MDBC and DBBRC)**	**MDBC and DBBRC cost pass through**	**Tribunal draft finding**	**Tribunal finding (excluding MDBC and DBBRC)**	**MDBC and DBBRC cost pass through**	**Tribunal finding**
Border	4.5	3.0	7.5	5.2	3.0	8.2
Gwydir	9.8	0.0	9.8	12.6	0.3	12.9
Namoi	11.4	0.0	11.4	14.0	0.3	14.3
Peel	3.5	0.0	3.5	4.2	0.0	4.2
Lachlan	13.1	0.0	13.1	15.7	0.0	15.7
Macquarie	11.7	0.0	11.7	14.4	0.2	14.6
Far West	-	-	-	-	-	-
Murray	7.9	48.4	56.3	10.0	27.1	37.1
Murrumbidgee	19.0	0.0	19.0	23.1	6.0	29.1
North Coast	2.1	0.0	2.1	2.4	0.0	2.4
Hunter	10.8	0.0	10.8	13.2	0.0	13.2
South Coast	2.1	0.0	2.1	2.6	0.0	2.6
Fish River	11.3	0.0	11.3	12.6	0.0	12.6
User total	**107.3**	**51.4**	**158.7**	**130.1**	**36.9**	**167.0**
Government share	**7.9**	**24.9**	**32.9**	**10.3**	**27.8**	**38.1**
Total	**115.2**	**76.3**	**191.6**	**140.4**	**64.7**	**205.1**

Note: Totals may not add due to rounding.

The user share of operating expenditure (excluding MDBC and DBBRC) has increased in all valleys from the draft to the final decision, although to varying degrees. The smallest increase from the draft determination is in the Fish River (11 per cent), with the Murray and Gwydir valleys the greatest increases at 27 and 28 per cent respectively.

The MDBC pass through amount has reduced significantly from the draft decision. However, due to the change in allocation of this cost across valleys discussed in section 7.6.2, the change between the draft and the final decision varies across valleys. The user share of MDBC costs has decreased in the Murray from $48.4 million to $27.1 million. A small proportion of these costs are now allocated to inland valleys including Border, Gwydir, Namoi and Peel. The greatest change is in the Murrumbidgee valley where the user share of these costs has increased to $6.0 million over the period 2006/07 to 2009/10.

7.7 Tribunal's analysis and findings on DNR's efficient forecast operating expenditure

The Tribunal considered DNR's forecast operating expenditure, its consultants' recommendations in relation to this expenditure and stakeholder views, taking into account the factors set out in section 15 of the IPART Act. Its analysis and findings on the efficient levels of forecast operating expenditure (excluding MDBC and DBBRC costs) and of forecast MDBC and DBBRC operating costs are discussed below. The overall effect of these findings is also discussed.

7.7.1 Efficient level of forecast operating expenditure (excluding MDBC and DBBRC costs)

The Tribunal finding on the level of efficient operating expenditure for DNR (excluding MDBC and DBBRC costs) is to determine a baseline with reference to the previous four years and then apply some adjustments in line with those recommended by Halcrow/MMA. The Tribunal has reduced DNR's costs associated with planning and development of the water sharing plans by half rather than fully reduce them as recommended by Halcrow/MMA.

In deciding whether to adopt DNR's operating expenditure forecasts, the Tribunal considered the reasons given for the significant increases over the 2006 determination above 2005/06, the recommendations made by its consultants and its analysis. The Tribunal believes that DNR's forecast do not represent an efficient level for the purposes of price setting. Its consultants also expressed this view.

DNR proposed significant increases to its WRM costs compared to the expenditure over the last few years, and argued that this is required to implement the water sharing plans and the NWI. However, the Tribunal is not convinced by this argument. Anecdotal information from some stakeholders including Hunter Water Corporation also indicates that CMAs will play a major role in this implementation. In addition, irrigators have consistently argued that the NWI should not result in a significant increase in DNR's costs, particularly as it is no longer required to undertake the planning activities.

The Tribunal considered how to establish the efficient level of operating costs. It notes that while its consultants adopted slightly different approaches to assessing the level of efficient costs, they have proposed similar levels. On balance, the Tribunal believes that the approach adopted by Halcrow/MMA is a reasonable basis for determining the level of efficient costs as it builds on actual costs and justifiable increases.

While the Tribunal believes that Halcrow/MMA's recommended approach for establishing the operating expenditure is reasonable, it considers that it should be adjusted in two ways. Firstly, the Tribunal has increased Halcrow/MMA's baseline expenditure so that total expenditure in 2006/07 is on par with average expenditure for the last four years. Secondly, in relation to the recommended removal of DNR's forecast $2.5 million of costs associated with planning and development of the water sharing plans in 2009/10, the Tribunal believes that only half of this amount should be removed. This is because it believes that once WSPs are completed some of these additional resources will still be required. The Tribunal's adjustment leaves $1.25 million per annum of costs associated with activities in this area that are still expected to occur in 2009/10.

7.7.2 Level of forecast MDBC and DBBRC operating expenditure

The Tribunal's finding on DNR's level of forecast MDBC and DBBRC costs is to adopt the costs set out in Table 7.11.

As discussed in Chapter 4 and section 7.6 above, the Tribunal has assessed that the total MDBC costs factored into its decision should be limited to the NSW Treasury Budget amounts. These forecasts have been allocated to river operations, and water resource management and natural resource management using DNR's estimate of the total cost for MDBC water resource management and natural resource management.

The Tribunal has decided that only water resource management costs should be recovered through bulk water prices. DNR provided the Tribunal with details about the allocation of MDBC costs between water resource management and natural resource management. The Tribunal has accepted the allocation of costs provided by DNR.

The Tribunal's finding is that the forecast MDBC costs for water resource management activities should be based on the revised estimates provided by DNR.

In relation to DBBRC, given the relatively low level of the costs, the Tribunal decided to accept DNR's cost estimates.

Table 7.11 Tribunal's finding on DNR's level of forecast MDBC and DBRRC operating expenditure ($ million, Real 2006/07)

	2006/07	2007/08	2008/09	2009/10	Total
MDBC					
DNR submission forecast	4.6	4.0	3.8	3.1	15.5
MDBC revised estimate	3.9	4.0	3.8	3.1	14.8
Tribunal draft finding	**4.0**	**4.1**	**3.9**	**3.1**	**15.1**
DNR revised submission (total MDBC)	10.7	10.7	10.7	10.7	42.9
Water resource management component	3.4	3.4	3.4	3.4	13.6
Tribunal finding	3.4	3.4	3.4	3.4	13.6
DBRRC					
DNR forecast	0.4	0.4	0.4	0.4	1.6
Tribunal draft finding	**0.4**	**0.4**	**0.4**	**0.4**	**1.6**
Tribunal finding	**0.4**	**0.4**	**0.4**	**0.4**	**1.6**

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.
3. DNR advised after the release of the Draft Report that the forecasts it submitted to the Tribunal were in 2005/06$ rather than 2004/05$. The Tribunal has adjusted DNR's forecasts and the MDBC revised estimate to reflect the amendment.

7.7.3 Overall effect of Tribunal's findings on DNR's forecast operating expenditure

The net effect of the Tribunal's findings is that the level of efficient forecast operating expenditure used in calculating the DNR's notional revenue requirement for the 2006 determination period is $184.4 million. This amount is $28.6 million or 13.4 per cent less than the agency's forecast operating expenditure, and $5.4 million or 2.8 per cent lower than the draft finding (see Table 7.12).

Table 7.12 Tribunal's finding on DNR's forecast operating expenditure compared with the agency's forecast and consultants' recommendations ($million, Real 2006/07)

	2006/07	2007/08	2008/09	2009/10	Total
DNR forecast (including MDBC and DBBRC)	53.1	53.8	53.8	52.2	212.9
DNR forecast (excluding MDBC and DBBRC)	48.1	49.3	49.6	48.7	195.8
PB Associates recommendation	42.5	43.3	43.5	43.2	172.4
Halcrow/MMA recommendation	43.1	43.1	43.7	40.9	170.8
Tribunal draft finding (excluding MDBC and DBBRC)	**43.3**	**43.4**	**43.9**	**42.4**	**173.0**
MDBC and DBBRC cost pass through	4.4	4.5	4.3	3.5	16.8
Tribunal draft finding	**47.7**	**47.9**	**48.2**	**46.0**	**189.8**
Tribunal finding	46.1	46.2	46.7	45.3	184.4
Calculated user-share	30.0	30.3	30.3	29.8	120.4
Calculated Government-share	16.1	15.9	16.4	15.5	64.0

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.
3. The Tribunal has adjusted DNR's forecast, PB Associates' recommendation, Halcrow/MMA's recommendation and its finding to reflect the inflation amendment.

7.7.4 Tribunal's findings on DNR's forecast operating expenditure by valley

The impact of the Tribunal's findings differs between valleys and water sources. The main difference compared to the draft finding is a lower user share of costs for regulated rivers in the Murray valley, due to a lower share of MDBC costs and a change in the allocation of those costs across valleys. As shown in Table 7.13, the user share of MDBC costs allocated to the Murray valley is $3 million lower compared to the draft report, while the amounts allocated to other valleys increase by small amounts.

Table 7.13 Tribunal's findings on DNR's forecast operating expenditure for Regulated rivers by valley compared to the draft determination ($ million, Real 2006/07)

	Draft decision			Final decision		
Valley	**Tribunal draft finding (excluding MDBC and DBBRC)**	**MDBC and DBBRC cost pass through**	**Tribunal draft finding**	**Tribunal draft finding (excluding MDBC and DBBRC)**	**MDBC and DBBRC cost pass through**	**Tribunal finding**
Border	1.8	0.7	2.5	1.7	0.9	2.6
Gwydir	2.3	0.1	2.4	2.2	0.3	2.5
Namoi	2.2	0.1	2.3	2.2	0.2	2.4
Peel	0.4	0.0	0.4	0.4	0.0	0.4
Lachlan	3.4	0.2	3.7	3.4	0.3	3.7
Macquarie	4.0	0.2	4.3	3.9	0.4	4.3
Far West	-	-	-	-	-	-
Murray	11.8	5.7	17.4	11.5	2.7	14.2
Murrumbidgee	10.0	1.8	11.8	9.7	2.0	11.8
North Coast	1.0	-	1.0	1.0	-	1.0
Hunter	1.6	-	1.6	1.5	-	1.5
South Coast	0.3	-	0.3	0.3	-	0.3
User total	**38.8**	**8.9**	**47.7**	**37.9**	**6.9**	**44.7**
Government share	**31.0**	**6.8**	**37.8**	**30.3**	**7.7**	**38.0**
Total	**69.7**	**15.8**	**85.5**	**68.2**	**14.6**	**82.8**

Note: DBBRC costs are allocated to the Border valley only.

There are only small changes in costs for unregulated rivers and ground water, which are a consequence of inflation adjustments and, for unregulated rivers, the removal of MDBC costs from some valleys. The differences between the draft and final reports for these valleys are shown in Appendix 4 (Table A4.12).

8 FORECAST CAPITAL EXPENDITURE

The Tribunal considered the efficiency of each agency's forecast capital expenditure for the 2006 determination period, as an input to its findings on the revenue required for capital investment. For State Water, the Tribunal's finding on the level of efficient forecast capital expenditure was used in rolling forward the agency's RAB for each year from 1 July 2006 to 30 June 2010 (discussed in Chapter 9). For DNR, the Tribunal took the finding on the level of efficient forecast capital expenditure into consideration when determining the agency's return of capital, or depreciation (discussed in Chapter 9).

The Tribunal assessed the efficiency and deliverability of each agency's forecast capital expenditure for the 2006 determination period. As part of this assessment, it engaged a consultant, PB Associates, to (among other things) review the agencies' forecast capital expenditure and recommend the efficient level for this expenditure. It also invited stakeholders to comment on the agencies' forecasts and on PB Associates' review and recommendations. In addition, the Tribunal engaged another consultant, Halcrow/MMA, to review PB Associates' recommendations and to consider stakeholders' submissions as input to its Draft Report and, then to review State Water's submission (and revised forecasts) to the Draft Report. The Tribunal subsequently engaged Halcrow to review State Water's amended operating expenditure following the draft report.

The Tribunal's finding on the agencies' efficient levels of capital expenditure is summarised in the section below. The subsequent sections discuss:

- the agencies' forecast capital expenditure
- PB Associates' review and recommendations on these forecasts
- stakeholders' submissions on the agencies' forecasts and PB Associates' review
- Halcrow/MMA's reviews and recommendations
- the Tribunal's analysis and findings in relation to each agency.

8.1 Summary of Tribunal's findings on capital expenditure

The Tribunal's finding is that the capital expenditures used in calculating the total notional revenue requirement for each agency for will be those shown in Table 8.1. It considers that these expenditures represent the efficient level of capital costs associated with the agencies providing bulk water services over the 2006 determination period.

Table 8.1 Tribunal's finding efficient level of capital expenditure for State Water and DNR ($million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
State Water	**18.4**	**9.8**	**32.8**	**46.6**	**107.5**
Calculated user-share	*11.9*	*5.7*	*8.2*	*7.8*	*33.7*
Calculated Government-share	*6.5*	*4.1*	*24.6*	*38.7*	*73.8*
DNR	**4.3**	**3.9**	**0.8**	**0.0**	**9.0**
Calculated user-share	*2.8*	*2.6*	*0.5*	*0.0*	*5.9*
Calculated Government-share	*1.5*	*1.3*	*0.3*	*0.0*	*3.1*

Note: Totals may not add due to rounding.

The findings on the efficient level of State Water's capital expenditure for each valley are set out in Appendix 4.

8.1.1 State Water

State Water developed its capital works program under its Total Asset Management Plan (TAMP), which takes account of the agency's various legislative and regulatory compliance requirements, particularly the requirement for it to take all appropriate steps to mitigate risks. State Water's original submission forecast total capital expenditure of $185.7 million over the 2006 determination period, of which $61.4 million was the user share.

State Water's response to the Draft Report stated that the Tribunal's draft findings on efficient capital expenditure forecasts were in line with its requirements. However, State Water proposed changes to the allocation of capital expenditure on a valley basis and also provided two capital expenditure profiles, based on different assumptions about the timing of major dam upgrades, as presented in Table 8.2 below.

Table 8.2 State Water's revised forecast capital expenditure ($million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
Upper limit profile	**30.1**	**34.6**	**58.1**	**33.9**	**156.7**
Calculated user-share	*20.8*	*11.6*	*12.0*	*8.8*	*53.2*
Calculated Government-share	*9.3*	*23.0*	*46.1*	*25.1*	*103.5*
Lower limit profile	**17.5**	**8.9**	**31.9**	**45.7**	**104.0**
Calculated user-share	*11.9*	*5.3*	*6.4*	*5.9*	*29.4*
Calculated Government-share	*5.6*	*3.6*	*25.5*	*39.8*	*74.5*

Notes:
1. Where appropriate, forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

8.1.2 DNR

DNR forecast total capital expenditure of $9.0 million over the determination period, of which $7.7 million is the user share (Table 8.3).

Table 8.3 DNR capital expenditure forecasts ($million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
Calculated user-share	3.7	3.4	0.6	-	7.7
Calculated Government-share	0.6	0.5	0.1	-	1.3
Total	4.3	3.9	0.8	-	9.0

Notes:
1. Where appropriate, forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

DNR has not revised its forecast capital expenditure since the Draft Report. However, it advised after the release of the Draft Report that the forecasts it submitted to the Tribunal were in $2005/06 rather than $2004/05. The Tribunal has adjusted its forecasts to reflect the amendment.

DNR's forecast capital expenditure is attributed to hydrometric instrumentation, station costs, groundwater monitoring bores and associated equipment to support WRM activities. The main components of its capital expenditure program are:

- $6.1 million ($ Real 2005/06) on metering and data systems to be spent over 2006/07 and 2008/09. This expenditure will ensure that by June 2008 about two thirds of unregulated and groundwater volume extracted is actively measured.
- $2.6 million ($ Real 2005/06) on groundwater monitoring network to be spent over 2006/07 to 2008/09 for the purchase of monitoring equipment (data, loggers and salinity probes). This program is an integral part of water sharing plans and is required for the management of water levels and quality.

8.2 PB Associates' review and recommendations

PB Associates evaluated the efficiency of each agency's forecast capital expenditure by:

- identifying the major cost drivers and determining the efficient cost levels for future years, consistent with maintaining service delivery capacity
- assessing the agencies' asset management framework plans and practices
- reviewing historic capital expenditures to provide background to and allow comparison with forecast expenditures
- considering whether the future capital expenditures are clear and defensible.

8.2.1 State Water

For State Water, PB Associates concluded that the proposed capital works program is prudent to meet obligations and defined service levels. However, after considering the methodology used to determine the timing of proposed projects and State Water's history of under-delivering against its capital works program, PB Associates recommended some reductions in the proposed valley and Fish River Scheme capital works program.

On the breakdown of the capital expenditure by valley, PB Associates recommended that State Water adjust valley budgets on the basis of priority. However, it noted that valley expenditure forecasts could be established by a pro-rata adjustment of the each valley's expenditure set out in the State Water submission.

PB Associates also made some observations about State Water's systems and processes related to capital planning and delivery:

- It noted the findings of the Tribunal's consultants for the 2005 determination, Marsden Jacob Associates/Cardno[37], who concluded that State Water's financial systems were not sufficiently developed to provide it with an accurate and robust forecast of costs.
- It considered that State Water's record of consistent and significant under-delivery against its capital works program casts doubt over the adequacy of State Water's expenditure forecasting methods and ability to deliver on its plans.
- It recommended that a regulatory audit of the 2004/05 Valley accounts be undertaken to ensure that correct allocation to Product Codes is occurring, and so that future price determinations can have assurance of correct cost attribution.

8.2.2 DNR

For DNR, PB Associates concluded that the proposed expenditure is prudent and efficient. It also noted that DNR's capital expenditure program is relatively small and involves on-going improvements to the monitoring network, especially for groundwater.

8.3 Stakeholder submissions

Stakeholders provided submissions in response to the initial agency submissions and to PB Associates' review. The views raised in these submissions most relevant to capital expenditure were discussed in Chapter 8 of the Draft Report.

Overall stakeholders were critical of the lack of information in the agencies' submissions, were concerned about the credibility of PB Associates analysis (eg, Murray Irrigation Ltd, Murrumbidgee Irrigation Corporation, and Gwydir Valley Irrigators Association), questioned State Water's ability to deliver its proposed expenditure programs (eg, Murray Irrigation Ltd).

8.4 Halcrow/MMA's reviews and findings

The Tribunal initially engaged Halcrow/MMA to review PB Associate's recommendations and to consider stakeholders' submissions in relation to State Water and DNR.

Following submissions on its Draft Report, the Tribunal engaged Halcrow to review State Water's revised submission and to provide recommendations to the Tribunal.

37 See - Marsden Jacob Associates-CardnoMBK (2005): *Review of Capital Expenditure, Asset Management and Operating Expenditure of State Water Corporation*, Report to IPART, 4th May 2005.

8.4.1 Review of PB report and initial submissions

As set out in section 7.5, Halcrow/MMA reviewed PB Associates' final report to identify any issues arising from its report, and to identify and fill any data gaps.

After assessing PB Associates' review and recommendations, and stakeholders' responses to this review, Halcrow/MMA's developed its own recommendations on the efficient level of forecast capital expenditure for each agency.

For State Water, their approach was to determine a baseline capital expenditure over the period 2002/03 to 2003/04, prior to corporatisation. They then considered State Water's performance in achieving its total proposed capital expenditure budgets over the period from 2002/03 to 2004/05 and found that, on average, State Water only achieved about 65 per cent of its total proposed capital expenditure budget in any one year.

Halcrow/MMA considered this performance was low and that it will affect the ability of State Water to meet its proposed capital expenditure program. They recommended the forecast capital expenditure be reduced to take into account the historical performance by approximately 35 per cent to the proposed capital expenditure in 2006/07, about 30 per cent in 2007/08, about 20 per cent in 2008/09 and about 17 per cent in 2009/10.

Halcrow/MMA proposed two options for the Tribunal to factor their reductions into the forecasts:

- apply a general reduction equally across all the valleys, resulting in a reduction of $44.2 million ($ Real 2005/06)
- apply specific reductions to particular valleys, resulting in a reduction of $47.6 million ($ Real 2005/06).

Halcrow/MMA recommended that the specific reductions should be applied to particular valleys. Halcrow/MMA believes that this provides a more robust method of applying the proposed reductions and does not affect the proposed expenditure in those valleys, which have not been underachieving with regards to their proposed capital expenditure budgets.

For DNR, Halcrow/MMA made no adjustments to DNR's proposed capital expenditure given the relatively small quantum of the expenditure, that some of the capital works are not ongoing, and others are externally funded. In addition, Halcrow/MMA noted that some of the capital works have historically been expensed or simply depreciated.

8.4.2 Final report and recommendation for State Water

Halcrow's approach to reviewing State Water's response to the Draft Report referenced the recommendations arising in its initial review and focussed on the rationale for making adjustments to these recommendations. Halcrow made a number of comments about the need for information to support further adjustments to the forecast and recommended that, on the basis of the information provided, its original recommendation be adjusted to offset the allowed increases in operating expenditure (see section 7.5) to reflect the changes to the capitalisation policies.

Table 8.4 Halcrow/MMA's recommended efficient levels of forecast capital expenditure for State Water excluding MDBC and DBBRC ($million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
Halcrow original assessment	19.9	38.6	39.7	41.7	139.9
Halcrow final recommendation	15.7	34.6	35.6	38.0	123.8

Where appropriate, forecasts have been converted to 2006/07$.
Totals may not add due to rounding.

8.5 Tribunal's analysis and findings on State Water's efficient forecast capital expenditure

The Tribunal's finding is to adopt the level of capital expenditure for State Water presented in Table 8.5.

The Tribunal considered State Water's submissions on capital expenditure, taking into account factors such as the drivers of the expenditure, State Water's ability to deliver on its proposed capital works program, and the factors set out in Section 15 of the IPART Act.

In relation to State Water's ability to deliver on its proposed capital works program, the Tribunal reflected on the advice received from PB Associates and Halcrow/MMA and on the information provided in State Water's submission to its Draft Report.

The Tribunal is concerned that in the past State Water has consistently under-delivered on its proposed capital program. In addition, it considers that the delays assumed in State Water's lower limit profile are likely to eventuate. Therefore, it finds that State Water's lower limit profile for capital expenditure is an appropriate baseline for the capital expenditure forecast.

The Tribunal notes that if State Water is able to substantially progress its capital program it can exceed the amounts allowed in the Tribunal's determination and seek to recover these costs from users at the next determination by including it in the Regulatory Asset Base (RAB). Whether any over expenditure can be included in the RAB at the next price review would depend on whether the Tribunal deems this expenditure to be prudent.

As noted in section 7.5, the Tribunal has not accepted State Water's proposal to transfer approximately $4.2 million in 2006/07 from the capital expenditure to the operating expenditure. Instead, the Tribunal has only allowed an increase of $2.1 million in operating expenditure to take account of these changes to State Water's capitalisation policy. As shown in section 7.6.1, the Tribunal has offset this reduction in operating expenditure with an increase in the capital expenditure of $0.9m per year. The Tribunal has added $0.9m to the lower limit capital expenditure profile.

The net effect of the Tribunal's findings is that the level of efficient forecast capital expenditure used in calculating the State Water's notional revenue requirement for the 2006 determination period is $107.5 million. This amount is $32.4 million or about 23 per cent less than the Tribunal's draft finding forecast capital expenditure (see Table 8.5).

Table 8.5 Tribunal's finding on State Water's efficient level of capital expenditure ($ million, Real 2006/07)

	2006/07	2007/08	2008/09	2009/10	Total
State Water original submission forecast	30.6	55.2	49.7	50.3	185.7
PB Associates recommendation	23.2	37.3	40.0	38.7	139.2
Halcrow/MMA original recommendation	19.9	38.6	39.7	41.7	139.9
Tribunal draft finding	**19.9**	**38.6**	**39.7**	**41.7**	**139.9**
State Water revised forecast – upper bound	30.1	34.6	58.1	33.9	156.7
State Water revised forecast – lower bound	17.5	8.9	31.9	45.7	104.0
Halcrow/ revised recommendation	15.7	34.6	35.6	38.0	123.8
Tribunal finding	**18.4**	**9.8**	**32.8**	**46.6**	**107.5**
Calculated user-share	*11.9*	*5.7*	*8.2*	*7.8*	*33.7*
Calculated Government-share	*6.5*	*4.1*	*24.6*	*38.7*	*73.8*

Notes:
1. Where appropriate, forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

The effect of the Tribunal's decision on State Water's efficient level of capital expenditure differs across valleys. State Water's revised forecast lower bound, that formed the basis of the Tribunal's capital expenditure finding, relates to a specific capital works program that varies across valleys. The greatest reduction in the user share of capital expenditure compared to the draft finding occurs in the Border (66 per cent) and coastal valleys (North Coast 60 per cent, Hunter 58 per cent and South Coast 54 per cent). The Peel increases from $0.8 million to $1.2 million.

Table 8.6 Tribunal's findings on State Water's efficient level of capital expenditure by valley for the period 2006/07 -2009/10 compared to the draft finding ($million, Real 2006/07)

Valley	Tribunal draft decision	Tribunal final decision
Border	0.5	0.2
Gwydir	2.5	1.9
Namoi	6.2	4.5
Peel	0.8	1.2
Lachlan	7.5	4.0
Macquarie	5.9	5.6
Far West	0.0	0.0
Murray	7.3	5.4
Murrumbidgee	5.1	4.9
North Coast	1.2	0.5
Hunter	3.9	1.6
South Coast	0.6	0.3
Fish River	7.2	3.5
User total	**48.7**	**33.7**
Government share	**91.2**	**73.8**
Total	**139.9**	**107.5**

8.6 Tribunal's analysis and findings on DNR's efficient forecast capital expenditure

The Tribunal's finding is to use DNR's forecast capital expenditure for the purposes of calculating a depreciation allowance, in line with PB Associates' and Halcrow/MMA's recommendations.

The Tribunal assessed DNR's proposed capital expenditure forecast, taking into account the drivers of this expenditure, its consultants' recommendations, stakeholder submissions and the factors set out in Section 15 of the IPART Act.

Given that DNR's capital expenditure program is relatively small, and that both PB Associates and Halcrow/MMA recommended that the Tribunal accept the agency's forecast capital expenditure for the purposes of calculating a depreciation allowance, the Tribunal's finding is to adopt the agency's forecast.

The net effect of the Tribunal's findings is that the level of efficient capital expenditure used in calculating the DNR's notional revenue requirement for the 2006 determination period is $9.0 million. This amount is the same as the DNR's forecast capital expenditure (see Table 8.7).

Table 8.7 DNR's forecast compared with Tribunal's finding on efficient capital expenditure ($ million, Real 2006/07)

DNR	2006/07	2007/08	2008/09	2009/10	Total
DNR forecast	4.3	3.9	0.8	-	9.0
PB Associates recommendation	4.3	3.9	0.8	-	9.0
Halcrow/MMA recommendation	4.3	3.9	0.8	-	9.0
Tribunal draft finding	**4.4**	**4.0**	**0.8**	**-**	**9.2**
Tribunal finding	**4.3**	**3.9**	**0.8**	**-**	**9.0**
Calculated user-share	*2.8*	*2.6*	*0.5*	*0.0*	*5.9*
Calculated Government-share	*1.5*	*1.3*	*0.3*	*0.0*	*3.1*

Notes:
1. Where appropriate, forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.
3. DNR advised after the release of the Draft Report that the forecasts it submitted to the Tribunal were in 2005/06$ rather than 2004/05$. The Tribunal has adjusted DNR's forecast, PB Associates' recommendation, Halcrow/MMA's recommendation and its finding to reflect the amendment.

9 REVENUE REQUIRED FOR CAPITAL INVESTMENT

As Chapter 6 discussed, the revenue requirement related to capital investment comprises two cost blocks: an allowance for a return on assets, and an allowance for a return of capital, or depreciation. Together, these allowances make up approximately one third of State Water's total notional revenue requirement.

The Tribunal notes that although DNR's submission included an indicative return on its assets, it specifically did not include an allowance for this return in its total costs to be recovered through bulk water charges. As this approach is consistent with its previous determinations and lower bound pricing, the Tribunal accepts DNR's proposal not to include an allowance for return on assets in its total costs.

The Tribunal calculated State Water's revenue requirement for capital investment by determining:

- the value of its RAB for each year of the determination period, taking into account a range of factors including its finding on the efficient level of forecast capital expenditure (discussed in Chapter 8)
- an appropriate allowance for a return on assets by deciding on an appropriate rate of return and multiplying the opening value of the RAB by this rate
- an appropriate allowance for depreciation, by deciding on the depreciation method and asset lives to be applied, then calculating depreciation on its RAB.

It calculated DNR's revenue requirement for capital investment by determining an appropriate allowance for depreciation, taking into account its finding on the efficient level of forecast capital expenditure (discussed in Chapter 8).

The Tribunal's findings on each agency's revenue requirements for capital investment are summarised in the section below. The subsequent sections explain the key inputs to those findings – including the Tribunal's findings on the methodology to be used in rolling forward State Water's RAB, the appropriate rate of return on State Water's RAB, and the depreciation method and asset lives that should be applied in determining each agency's allowance for depreciation.

9.1 Summary of Tribunal's finding on agencies' notional revenue requirement for capital investment

The Tribunal's finding is that the allowances for a return on assets and for depreciation used to calculate the total notional revenue requirement for each agency will be those shown Table 9.1 below.

Table 9.1 Revenue requirement associated with capital investment ($million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
State Water	**23.2**	**24.1**	**25.6**	**28.4**	**101.3**
Calculated user-share	*11.3*	*11.9*	*12.4*	*12.9*	*48.6*
Calculated Government-share	*11.8*	*12.2*	*13.2*	*15.5*	*52.7*
DNR	0.8	0.8	0.8	0.9	3.3
Calculated user-share	0.7	0.7	0.7	0.7	2.8
Calculated Government-share	0.1	0.1	0.1	0.1	0.5

Note: Totals may not add due to rounding.

9.2 Rolling forward State Water's RAB for long lived assets

As discussed in section 4.2.1, the Tribunal has decided to use the RAB approach for including State Water's forecast capital expenditure in pricing. The RAB approach requires the establishment of an opening RAB value at 1 July 2004 which is then rolled forward to reflect the Tribunal's findings on the efficient forecast capital expenditure for 2006/07 to 2009/10 (less forecast disposals for 2006/07 and for each year of the 2006 determination period, and less regulatory depreciation).

The Tribunal's methodology used in rolling forward the RAB, its findings on the opening RAB value at 1 July 2004, and the resulting values for State Water's RAB over the determination period are discussed below.

9.2.1 Methodology to be used in rolling forward the RAB

The Tribunal determined the value of State Water's opening RAB at 1 July 2006 by:

- establishing an opening RAB value at 1 July 2004
- rolling forward the 1 July 2004 RAB to 30 June 2006 on the basis of actual prudent capital expenditure over this period (net of capital contributions)
- deducting estimated regulatory depreciation
- deducting actual/forecast disposals
- indexing the annual closing regulatory asset base for actual/forecast inflation.

The Tribunal rolled forward State Water's RAB for each year from 1 July 2006 to 30 June 2010 by:

- Adding the forecast efficient capital expenditure for that year (net of capital contributions) to the opening RAB. Half the capital expenditure is assumed to occur at the start of the year and is indexed by the movement in the CPI, the other half is assumed to occur at the end of the year and is not indexed.
- Deducting the regulatory depreciation for that year allowed by the Tribunal in this determination.
- Deducting forecast disposals for that year.
- Indexing the annual closing RAB for forecast inflation.

This approach is consistent with recent decisions made by the Tribunal in the gas, electricity and metropolitan water industries.

9.2.2 Opening RAB value at 1 July 2004

The Tribunal's finding is to set the value of State Water's opening RAB at 1 July 2004 at $240.8 million with $83.5 million allocated for users and $157.2 million for Government. This opening RAB excludes MDBC, DBBRC and the Fish River Scheme.

As discussed in section 4.2.1, the Tribunal considers that in the long term, a decision to adopt the RAB approach for bulk water pricing is inevitable. It also considers that deferring the adoption of the RAB approach until after the 2006 determination would only make its adoption at a later point more difficult. To adopt a RAB approach, the Tribunal needs to decide on the appropriate opening value of State Water's RAB at 1 July 2004.

State Water proposed an opening RAB value[38] of $302.6 million at 1 July 2004, of which $110.8 million is allocated to users and $191.9 million to government. State Water stated that in calculating this value, it adopted the approach used by the Government in establishing the agency's initial RAB value at its corporatisation. It has argued that ultimately the RAB at 1 July 2004 would be equivalent to the annuity that was previously being charged under the Tribunal's 2001 determination such that there was no disadvantage to customers[39]. The Tribunal understands that the Government determined this initial RAB value by capitalising the annuity (in aggregate and by valley) in the Tribunal's 2001 determination by applying a capitalisation rate of 6 per cent, resulting in a RAB value of $300 million. This capitalisation rate comprised a 5 per cent real pre-tax WACC and a 1 per cent depreciation allowance.

The Tribunal believes that the Government's approach is a reasonable one for determining the opening value of State Water's RAB at 1 July 2004. However, in its Draft Report the Tribunal identified a number of departures by State Water in applying the Government's approach.

38 Excluding any RAB value associated with the MDBC, DBBRC and the Fish River Scheme.

39 State Water Corporation, Transcript for Public Hearing into Bulk Water Medium Term Price Review, Dubbo, 25 January 2006, p 8.

The Tribunal is concerned about State Water's approach, because it believes the assumptions underlying the disposal value are circular, and because it has not assessed the efficiency of State Water's forecast capital expenditure profile as at 1 July 2004. Therefore, the Tribunal believes that some adjustments are required to ensure that the approach used is consistent with the Tribunal's general approach to modelling a RAB, including the applicable WACC and asset lives/depreciation that comprise the 'capitalisation rate'. The Tribunal believes that a WACC of 7 per cent should be used when capitalising the annuity. This WACC is consistent with the Tribunal's 2001 and 2005 determinations. It is also consistent with the market conditions as at 1 July 2004. These conditions provide a WACC in the range 6.3-7.8 per cent with a mid-point of 7 per cent. In relation to assets lives, State Water proposed that a weighted average life of 160 years (or depreciation rate of 0.6 per cent) be applied for depreciating the opening RAB. The Tribunal believes this proposal is appropriate and should be adopted in determining the 1 July 2004 asset value.

After making adjustments to the methodology, the Tribunal calculated an opening RAB value of $240.8 million (excluding MDBC, DBBRC and the Fish River Scheme), which is approximately 20 per cent lower than the value State Water proposed. It then apportioned the user share of this RAB ($83.5 million) across valleys in accordance with its 2001 determination allowance for annuity by valley, as shown in Table 9.2.

Table 9.2 Opening RAB value apportioned across valleys at 1 July 2004 ($million, Nominal)

Valley	Users	Government	Total
Border	1.8	0.4	2.2
Gwydir	11.7	37.0	48.8
Namoi	8.8	41.2	50.1
Peel	2.0	8.8	10.8
Lachlan	9.1	15.0	24.1
Macquarie	12.3	19.7	32.0
Murray	6.8	5.6	12.4
Murrumbidgee	19.2	19.8	39.0
North Coast	2.0	1.5	3.5
Hunter	8.5	7.7	16.2
South Coast	1.2	0.4	1.6
Total	**83.5**	**157.2**	**240.8**

In response to the Draft Report, State Water accepted the Tribunal's methodology for calculating the opening RAB but argued that a WACC no greater than 6 per cent should be used when capitalising the previous annuity, resulting in an estimated opening RAB of at least $277 million. In contrast, NSW Irrigators' Council (NSWIC) questioned whether adopting the RAB approach will be of long-term benefit to its members and requested that the Tribunal demonstrate that the abolition of the 'line-in-the-sand' approach will not lead to future disadvantage for industry. However, NSWIC does reluctantly support the adoption of a RAB approach based on an opening RAB of $240.8 million, with $83.5 million allocation to users and $157.2 million allocated to government as it is a significantly better outcome than that proposed by State Water.

Gwydir Valley Irrigator's Association (GVIA) and Namoi Water reaffirmed their original arguments that the opening RAB should be based only on the roll-forward of post-1997 expenditure, in accordance with the Tribunal's 1997 'line-in-the-sand'. Bega Co-Operative Society argued that nominal RAB value apportioned to Brogo DAM is not justified.

In making its decision, the Tribunal has considered these submissions and been mindful of its 1998 decision to provide a nil value for all pre-1997 capital expenditure in setting prices. It notes stakeholder concerns about the value of pre-1997 assets being included in establishing an opening value for the RAB. The Tribunal's 1998 decision was made in the context of applying an annuity approach to calculating the revenue required to fund forecast capital expenditure. At that time, it believed that pre-1997 assets should have a nil value under the annuity approach. The Tribunal also notes that if a RAB approach had been used at that time, it would not have had a zero opening RAB at 1 July 1997. In fact, a higher RAB would have been needed to result in the same level of prices as under the annuity approach. Accordingly, in changing from the annuity approach to the RAB approach, the Tribunal believes it is necessary to reconsider the opening value attributed to the RAB.

As mentioned above, the Tribunal believes that a WACC of 7 per cent used in capitalising the annuity is consistent with the WACC utilised in the its 2001 and 2005 determination and with the WACC for the forthcoming regulatory period. The approach used to capitalise the annuity is based on equivalence between the annuity and RAB approaches. A WACC of 7 per cent was used to calculate the annuity for the 2001 determination that was then implicitly maintained in the Tribunal's 2005 determination. To use a WACC other than 7 per cent would be inconsistent with the Tribunal's 2001 and 2005 bulk water determinations.

The Tribunal considered the financial impact of its finding on the opening RAB value at 1 July 2004 on State Water. It believes that its finding provides an acceptable financial outcome for State Water and will allow the agency to achieve at least an investment grade credit rating.[40]

The Tribunal notes that its finding is a departure from the $300 million value established by the Government on the corporatisation of State Water on 1 July 2004. Although it supports the approach taken by the Government, the Tribunal does not, for the reasons outlined above, agree with the some of the inputs used to determine the opening RAB by the Government. Amending for these inputs (ie, capitalisation rate) results in the Tribunal's different opening RAB value.

The Tribunal also notes that an opening RAB of $46.5 million at 1 January 2005 has been used for estimating cost recovery associated with the Fish River Scheme (see section 13.2).

9.2.3 Resulting RAB values over the determination period

The Tribunal has applied the methodology set out in section 9.2.1 using the capital expenditure set out in Chapter 8 and section 9.2.3 and the opening RAB value at 1 July 2004 set out in section 9.2.2. The resulting closing RAB value for State Water over the 2006 determination period is shown in Table 9.3.

40 Based on Government funding its share of State Water's costs.

Table 9.3 State Water's closing RAB value (including the Fish River Scheme) for 2006 determination period ($million, Nominal 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10
Agency proposal (inc MDBC)	595.9	595.9	595.9	595.9
Tribunal decision	340.6	359.6	404.1	465.9
Difference between agency proposal and Tribunal decision	*-255.2*	*-236.3*	*-191.8*	*-129.9*

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

In relation to the Fish River Scheme, the Tribunal notes its pricing decision adopts a 4 per cent nominal price increase consistent with State Water's proposal. This decision is not based on a building block approach. The resulting prices do not result in excessive over-recovery for the Fish River Scheme (101 per cent in 2009/10) based on an allowance for an opening RAB of $46.5 million allocated 100 per cent to users as at 1 January 2005. This opening RAB was transferred to State Water at $46.5 million and it forms part of State Water's total RAB shown in Table 9.3.

9.3 Rate of return on State Water's RAB

There are several approaches for calculating the appropriate rate of return on the RAB. In making its determination, the Tribunal used its preferred approach, which is to use the real pre-tax Weighted Average Cost of Capital (WACC) to determine an appropriate range for the rate of return. The WACC is a 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 approach is consistent with the approach the Tribunal has used in other determinations.

The Tribunal's finding on the rate of return is summarised in the section below. The following sections discuss State Water's and other stakeholders' submissions on the rate of return and the Tribunal's analysis.

9.3.1 Summary of the Tribunal's finding on the rate of return

The Tribunal's finding is that for the purposes of calculating the allowance for a return on assets, a real pre-tax rate of return of 6.5 per cent will be applied. This finding reflects the Tribunal's view that the industry weighted average cost of capital is in the range of 5.5 to 6.9 per cent.

The parameters it used to calculate this WACC range are shown in Table 9.4.

Table 9.4 WACC parameters

Parameter	Draft finding	Finding
Nominal risk free rate	5.7%	5.8%
Real risk free rate	2.6%	2.4%
Inflation	3.1%	3.3%
Market risk premium	5.5 - 6.5%	5.5 - 6.5%
Debt margin and allowance for debt raising costs	1.1 - 1.2%	1.1 - 1.3%
Debt to total assets	60%	60%
Dividend imputation factor, or gamma	0.5-0.3	0.5 - 0.3
Tax rate	30%	30%
Equity beta	0.8 -1.0	0.80 - 1.0
Cost of equity (nominal post-tax)	10.1 - 12.2%	10.2 - 12.3%
Cost of debt (nominal pre-tax)	6.8-6.9%	6.9 - 7.1%
WACC range (real pre-tax)	**5.6 - 7.1%**	**5.5 - 6.9%**

* Market parameters for the Draft Finding are calculated to 17 May 2006 and for the Finding to 22 August 2006.

9.3.2 State Water's submission

The Tribunal has not made decisions on WACC parameters in previous bulk water price reviews. In its submission, State Water proposed that a real pre-tax WACC of 7.0 per cent be used to calculate its allowance for a return on assets, but did not include any detail on the parameters it used to generate this WACC. Rather, it based its proposal on advice of Treasury that the appropriate WACC range was 5.9 to 7.7 per cent.

State Water also noted that it faces greater level of revenue risk than other utilities due to the nature of its pricing structure, and to what it believes is essentially a revenue cap resulting from extraction limits under the water sharing plan.[41] The CIE suggested that one option for addressing this risk would be to take account of it in the WACC.

9.3.3 Other stakeholders' submissions

Most of the submissions that addressed State Water's proposed rate of return in detail argued that a real pre-tax WACC of between 5 and 6 per cent was appropriate, given State Water's risk profile, and questioned State Water's claim that as a bulk water provider it faced significant levels of revenue risk.[42]

In a report prepared for Coleambally Irrigation Cooperative Ltd and Murray Irrigation Ltd, Marsden Jacob Associates (MJA) argued a WACC of 5 per cent was appropriate, given State

41 Under its Operating Licence, State Water must seek up to 60 per cent of its revenue through variable charges. In addition, the maximum revenue is also capped by volume of extraction permitted under the water sharing plan limits.

42 See Jemalong Irrigation Limited submission to IPART: Review of Bulk Water Prices from 2006/07, 2 December 2005; Murrumbidgee Irrigation submission to IPART: Review of Bulk Water Prices from 2006/07, 25 November 2005; and Lachlan Valley Water Inc submission to IPART: Review of Bulk Water Prices from 2006/07, 22 November 2005.

Water's risk profile. MJA also argued that the maximum WACC value should be around 6.4 per cent, given the Tribunal's previous determinations for the urban water sector.[43]

Murray Irrigation Limited also opposed any adjustment to State Water's rate of return to address revenue risk.[44]

9.3.4 Response to the Tribunal's draft finding on WACC

The Tribunal's draft finding for the purposes of calculating the allowance for a return on assets was a real pre-tax rate of return of 6.4 per cent.

State Water[45] believes that the Tribunal draft finding on WACC is too low and that a higher WACC is appropriate because:

- Its systematic risk profile warrants a different equity beta than that used for the metropolitan water businesses. It faces higher revenue risk than metropolitan water businesses due to its pricing structure (fixed/variable split) and fluctuating demand which would place its equity beta at double the average market risk (an equity beta of 2.0).
- The WACC of 7 per cent adopted by the Tribunal for the calculation of the RAB as at 1 July 2004 implies an equity beta of 1.15.
- Due to a lack of observable evidence of returns relative to the market , a default or null hypothesis estimate of equity should be used (an equity beta of 1.0).

Effectively, State Water argues that its equity beta should be higher than the Tribunal's draft finding range of 0.80 to 1.0.

State Water also questions the benchmark capital structure (level of gearing) of 60 per cent adopted by the Tribunal. State Water also argues that a lower level of gearing should be used in the WACC calculation due to:

- its revenue volatility
- a gearing of 60 per cent pushes State Water's credit rating below investment grade.

In general, other submissions argued that the Tribunal should reduce the rate of return in its final decision. Gwydir Valley Irrigators Association argued that the rate of return should be at the lower end of the feasible range given the long-term relatively low risk nature of State Water's business.[46] Murray Irrigation maintains that a lower WACC is appropriate for State Water, noting that it does not support the use of a higher WACC as a mechanism to manage risk.[47] The NSW Irrigators' Council argues that the Tribunal's draft finding of 6.4 per cent is at the top end of current market rates. The Council does not support the adoption of upper bound pricing and therefore an allowance for a return on capital in State Water's revenue requirement.[48] Namoi Water also questions the move to upper bound pricing on rural water

43 Marsden Jacob Associates, A report prepared for Coleambally Irrigation Cooperative Ltd and Murray Irrigation Ltd, 22 November 2005.

44 Murray Irrigation Limited, *Response to Review of Consumption Forecasts: CIE Report for IPART,* March 2006; and NSW Irrigators' Council, *Response to the CIE Reviews,* not dated.

45 State Water Corporation, *SWC Response to Draft Determination*. May 2006, p 14.

46 Gwydir Valley Irrigators Association, submission in response to draft report, p 6.

47 Murray Irrigation, submission in response to draft report, pp 14-15.

48 NSW Irrigators' Council, submission in response to draft report, p 10.

infrastructure.[49] Macquarie River Food & Fibre supports the Tribunal's decision not allow State Water's proposed rate of return of 7 per cent. However, it argues that the Tribunal has ignored the principle COAG sets out regarding return on capital not being required for investments that have a community benefit.[50]

9.3.5 Tribunal's analysis

In making its finding on the rate of return, the Tribunal considered the submissions it received from State Water and other stakeholders. It also considered separately each of the parameters used in calculating the WACC. Ultimately, it exercised its judgement, taking into consideration the requirements of the IPART Act – particularly Sections 15(1)(b) dealing with the protection of consumers from abuses of monopoly power; 15(1)(c) dealing with an appropriate rate of return including payment of dividends; and 15(1)(k) dealing with the social impact of its determinations and recommendations. It investigated the implications of its chosen rate of return on the average bills paid by customers with differing characteristics, and on the financial viability of the businesses estimated by changes in key financial ratios.

The Tribunal's considerations on each of the parameters used to calculate the WACC range are summarised in Appendix 3.

Most of these parameters are not specific to the bulk water industry, so there are regulatory precedents for estimating their value. The equity beta and the debt margin are the only parameters that are specific to State Water. The equity beta is the most controversial of the parameters.

In considering the equity beta, the Tribunal noted State Water's view that it faces a greater level of revenue risk than other utilities.

On balance, the Tribunal believes that there is no conclusive evidence that State Water's systematic risk profile warrants a different equity beta to that used for the metropolitan water businesses. As it is only systematic or economy-wide risk that is reflected in the equity beta, the Tribunal's finding is to adopt an equity beta in the range of 0.8 to 1.0, as it did in the 2005 Metropolitan Water Determination and in its Draft Report.

The Tribunal acknowledges that although Sydney Water and State Water have a similar pricing structure (fixed vs. variable revenue), State Water is likely to face higher levels of demand fluctuation and therefore revenue volatility. The Tribunal has considered this in selecting the point rate of return from within the range. However, the Tribunal's analysis shows that there is little correlation between State Water's returns and general market movements.

In relation to State Water's claim that its draft finding for the RAB at 1 July 2004 implies a beta of 1.15, the Tribunal's analysis indicates an equity beta of 0.90 (mid-point of 0.80 – 1.0) resulting in a WACC of 7 per cent.

49 Namoi Water, submission in response to draft report, p 4.

50 Macquarie River Food & Fibre, submission in response to draft report, p 3.

9.4 State Water depreciation method and asset lives

The allowance for a return of capital, or depreciation, represents the revenue each agency requires to maintain the value of its assets. Depreciation represents around 3-4 per cent of State Water's total notional revenue requirement.

To determine this allowance, the Tribunal has made findings on the depreciation method and the asset lives to be applied. The following sections discuss each of these findings.

9.4.1 Depreciation method

The Tribunal's finding is that it will use the straight-line depreciation method to calculate the return of capital (depreciation) allowance for State Water.

The Tribunal believes that this approach is superior to alternatives in terms of simplicity, consistency and transparency. This approach is consistent with decisions made by the Tribunal in other industries and with State Water's submissions.

9.4.2 State Water's asset lives to be applied

The Tribunal's finding is to calculate depreciation for State Water's long lived assets using the asset lives shown in Table 9.5. These asset lives are consistent with those proposed by State Water.

Table 9.5 Asset lives used in calculating depreciation allowance for long lived assets owned by State Water

Asset class	Draft finding	Finding
Existing assets - expenditure prior to 1 July 2004	160 years	160 years
New Assets - expenditure post 1 July 2004	75 years	75 years

The significant difference in asset lives between existing and new assets reflects the impact that dams have on asset lives for existing assets.

State Water also has some short-lived assets that it has valued at historical cost and depreciated at the rates adopted for accounting purposes.

The Tribunal's decision is to adopt the depreciation amounts proposed by State Water for its short-lived assets shown in Table 9.6.

Table 9.6 Depreciation allowance for short lived assets owned by State Water ($'000, Real 2006/07)

Valley	2006/07	2007/08	2008/09	2009/10	Total
Border	62	62	62	62	248
Gwydir	26	26	26	26	103
Namoi	30	30	30	30	120
Peel	0	0	0	0	0
Lachlan	32	32	32	32	128
Macquarie	27	27	27	27	107
Far West	-	-	-	-	-
Murray	40	40	40	40	161
Murrumbidgee	88	88	88	88	351
North Coast	0	0	0	0	0
Hunter	8	8	8	8	33
South Coast	17	17	17	17	66
Fish River Scheme	0	0	0	0	0
User total	330	330	330	330	1318
Government share	0	0	0	0	0
Total	330	330	330	330	1318

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. Totals may not add due to rounding.

9.5 DNR's depreciation allowance

The Tribunal's finding is to adopt Halcrow/MMA's recommended depreciation allowance for DNR shown in Table 9.8.

Halcrow/MMA reviewed DNR's proposed depreciation allowance and underlying assumptions. Halcrow/MMA's recommendation on DNR's depreciation method compared with DNR's proposal is shown in Table 9.7.

Table 9.7 DNR depreciation method and Halcrow/MMA recommendation

Asset class	DNR proposal	Halcrow/MMA recommendation
Groundwater bores	Assets valued at replacement value at 1 July 2005 and then adjusted by 2.5% (for inflation) to 1 July 2006. Asset life subject to a minimum remaining life of 5 years	Eliminated depreciation on pre-1997 assets Assessed the expected life of bores to be significantly greater than 10 years
Capital expenditure on groundwater bores	Straight-line over 10 years	Recalculated depreciation using a (conservative) expected life of 25 years for all bore assets
Other assets	Depreciated at historical cost using useful life. Projected depreciation base on 2004/05	Agreed with DNR proposal

Halcrow/MMA's recommended depreciation allowance and the Tribunal's findings are shown in Table 9.8.

Table 9.8 DNR's proposed depreciation allowance compared with Halcrow/MMA recommended allowance ($million, Real 2006/07)

Depreciation allowance	2006/07	2007/08	2008/09	2009/10	Total
DNR proposal	1.8	1.9	1.9	2.0	**7.5**
Halcrow/MMA recommended	0.8	0.8	0.8	0.9	**3.3**
Tribunal's draft finding	**0.8**	**0.8**	**0.9**	**0.9**	**3.4**
Tribunal's finding	**0.8**	**0.8**	**0.8**	**0.9**	**3.3**

Notes:
1. Where appropriate, agency forecasts have been converted to 2006/07$.
2. dDNR advised after the release of the Draft Report that the forecasts it submitted to the Tribunal were in 2005/06$ rather than 2004/05$. The Tribunal has adjusted DNR's forecast, Halcrow/MMA's recommendation and its finding to reflect the amendment.

10 CONSUMPTION FORECASTS AND ENTITLEMENT VOLUMES

Once the Tribunal has decided on the users' share of each agency's revenue requirement, it sets the prices of individual services by taking into account this revenue requirement, and in some cases, the forecasts of water consumption, licensed water entitlements and/or number of licences. If these forecasts are not reasonable, there is a risk that the prices the Tribunal sets will lead to the agency significantly over or under recovering its required revenue.

For this review, the Tribunal sought to ensure that the forecasts on which the pricing determinations are based were subject to rigorous and objective review. It engaged the Centre for International Economics (CIE) to independently review State Water's consumption forecasts for regulated rivers and, if appropriate, to provide the Tribunal with revised forecasts for the purposes of setting prices. For unregulated rivers, it obtained information on licensed entitlement volumes and the number of licences from DNR.

The consumption/entitlement forecasts used by the Tribunal in setting bulk water prices are summarised in the section below. The following sections discuss the Tribunal's analysis and rationale for its findings on consumption forecasts for regulated rivers, and the approach it used to make its findings on entitlement volumes and usage on regulated rivers, unregulated rivers and ground water.

10.1 Summary of Tribunal's findings on consumption and entitlement volume forecasts

The Tribunal's finding is to use the water consumption, entitlement volumes, and entitlement licence numbers shown in Tables 10.1 to 10.3 when setting prices for 2006/07 to 2009/10.

Table 10.1 Consumption and entitlement volumes for Regulated Rivers

Region/river valley	Consumption	Licensed Entitlement	
	ML	High Security ML	General Security ML
Border	209,670	3,107	263,328
Gwydir	309,164	21,439	509,917
Namoi	237,146	8,519	255,936
Peel	14,675	17,378	30,383
Lachlan	307,149	57,144	633,951
Macquarie	386,311	42,095	631,526
Far West	-	-	-
Murray	1,934,830	252,083	2,029,307
Murrumbidgee	1,915,848	358,552	2,414,307
North Coast	992	127	9,088
Hunter	128,067	70,694	137,955
South Coast	5,831	903	14,014
Total	**5,449,683**	**832,041**	**6,929,712**

Table 10.2 Entitlement volumes, number of licences and usage for Unregulated Rivers

Region/river valley	Irrigators	Town and industry		
	Licensed Entitlement ML	No. of licences	Usage ML	Licensed Entitlement ML
Border	33,956	30	750	938
Gwydir	34,389	10	250	313
Namoi	139,585	25	600	750
Peel	15,994	-	-	-
Lachlan	31,659	29	22,000	27,500
Macquarie	115,749	68	51,000	63,750
Far West	214,547	19	3,700	4,625
Murray	54,746	27	2,500	3,125
Murrumbidgee	71,497	41	16,000	20,000
North Coast	134,306	114	90,000	112,500
Hunter	130,303	76	60,000	75,000
South Coast	162,777	253	120,000	150,000
Total	1,139,506	692	366,800	458,500

Notes:
1. Town and industry licence number and usage data is as per the 2001 determination.
2. The licensed entitlement volume for town and industry is 125 per cent of the usage data.
3. The irrigators licensed entitlement volumes in the far west are after expected reductions to entitlements following introduction of the water sharing plans.

Table 10.3 Entitlement volumes and usage for Groundwater

Region/river valley	No. of licences		Licensed Entitlement	Metered Usage
	Highly managed areas	Other areas	ML	ML
Barwon region	1,478	294	648,832	233,469
Central West	1,290	445	716,707	281,337
Far West	-	27	1,831	1,188
Murray	351	81	388,902	85,361
Murrumbidgee	207	485	611,158	332,000
North Coast	-	925	48,143	-
Hunter	-	912	141,100	-
South Coast	-	734	33,122	-
Total	**3,327**	**3,903**	**2,589,796**	**933,356**

Notes:
1. The Barwon region includes Border, Gwydir, Namoi and Peel.
2. The Cental West region includes Lachlan and Macquarie.
3. The licensed entitlement volumes are the 2004/05 billing volumes before any reductions resulting from the water sharing plans.
4. Usage is metered in managed areas only.

10.2 Consumption forecasts for regulated rivers

In making its decisions on the consumption forecast for regulated rivers for each valley, the Tribunal considered the agencies' submissions, CIE's findings and recommendations, and the views of other stakeholders. Each of these matters, plus the Tribunal's analysis and findings are discussed below.

10.2.1 Agency submissions

State Water proposed that prices should be set using the long run average (LRA) usage, less one standard deviation, and that the LRA be based on output from DNR's Integrated Quantity and Quality Model (IQQM[51]). It argued that the one standard deviation adjustment was required to account of the increased risk of increasing the usage component of tariffs and the potential reductions in water resulting from global warming.

DNR's submission did not comment on consumption forecasts. It proposed that its charges should not vary with usage, in which case consumption forecasts are not required.

10.2.2 CIE's review

CIE reviewed State Water's proposed approach, and assessed whether alternative forecasting models, specifically the alternative autoregressive integrated moving average (ARIMA) approach, may provide a more robust consumption forecast for pricing purposes. CIE considered the data and assumptions used to generate the agency forecasts. It also

[51] IQQM is a hydrological model that 'predicts' how a system would have behaved given inputs to flows and storage. The output represents potential or modelled extractions given historical flow conditions and current management rules.

considered the implications for forecasting of changing water management rules, particularly those caused by the recently implemented water sharing plans.

The ARIMA approach to forecasting consumption discerns patterns in consumption from the modelled historical data, and postulates that the pattern is based on some statistical correlation (relationship) between current and past consumption. In contrast, the LRA approach assumes that consumption in any given year is independent of past consumption.

To compare the accuracy of the two approaches, CIE calculated the average consumption over a five-year period for each valley using the both LRA and ARIMA approaches, and the benchmark value derived from IQQM output. Its findings, shown on Table 10.4, suggest that the ARIMA approach generally performs slightly better than the LRA approach when forecasting consumption. However, CIE concluded that the accuracy gains of using the ARIMA approach for price setting purposes may be limited, since prices are set using a smoothed approach, rather than assuming annual fluctuations in consumption.

Table 10.4 Comparison of forecast consumption calculated using the LRA and ARIMA approaches

Region/river valley	Forecast period	LRA ML	ARIMA ML
Border	1998–2002	209,670	222,240
Gwydir	1997–2001	309,160	359,000
Namoi	1997–2001	237,150	221,430
Peel	1995–99	14,680	15,050
Lachlan	1995–99	307,150	340,020
Macquarie	1996–2000	386,310	434,440
Far West		NA[52]	NA
Murray	1995–99	1,934,830	2,136,170
Murrumbidgee	1998–2002	1,915,850	2,080,550
North Coast		NA	NA
Hunter	1990–94	128,070	130,840
South Coast		NA	NA

Source: CIE.

CIE also considered the other aspects of State Water's proposed approach to forecasting consumption – that the LRA be based on output from DNR's IQQM, and be adjusted downwards by one standard deviation. In relation to using the IQQM, CIE concluded that this proposal was reasonable, "given the available data and absence of alternative model for forecasting".[53]

In relation to adjusting the LRA downwards by one standard deviation, CIE found that this proposal was inappropriate. Its analysis showed that there was a high probability that the adjustment would result in substantial over-recovery of costs over most five-year periods. In addition, CIE considered that making such an adjustment to address revenue risks "appears

52 Not available.

53 CIE, *Review of consumption forecasts*, March 2006, p 21.

arbitrary and unnecessarily conservative".[54] It suggested that revenue risk would be better addressed through other elements of the price determination.

10.2.3 Stakeholder submissions

The Tribunal received submissions on State Water's and DNR's proposals, and on CIE's review. In general, stakeholders supported CIE's conclusions – including its views that use of the LRA approach for forecasting consumption was appropriate, but that the LRA should not be adjusted downwards to reduce the agencies' revenue risk. Many strongly supported the recommendation not to adjust the LRA to reduce risk, including Lachlan Valley Water, Murray Irrigation, Murrumbidgee Irrigation and Macquarie River Food & Fibre.

The NSW Irrigators' Council opposed the use of the LRA approach, stating that it preferred a forecasting approach that would be based on average metered extractions, as calculated annually from a moving average of the last ten years' metered extractions and deliveries for all classes of entitlements. It also rejected any attempts to include a risk premium in the WACC for additional revenue volatility.

10.2.4 Tribunal's findings on consumption forecasts for regulated rivers

The Tribunal's finding is that regulated river consumption forecasts should be calculated using the LRA approach, and that the LRA should be based on output from DNR's IQQM but should not be adjusted downwards by one standard deviation. Based on its own analysis, plus CIE's review and stakeholder submissions, the Tribunal considers that this approach to forecasting consumption is appropriate for setting prices at this time.

Table 10.5 compares the consumption forecasts submitted by State Water and the Tribunal's findings on the consumption forecasts to be used to set prices for the entire 2006 determination period.

54 CIE, *Review of consumption forecasts*, March 2006, p 23.

Table 10.5 Consumption forecasts submitted by State Water versus Tribunal's findings

Region/river valley	State Water's submission		Tribunal's finding
	LRA ML	LRA less 1 SD ML	LRA ML
Border	209,670	159,046	209,670
Gwydir	309,164	185,581	309,164
Namoi	237,146	171,036	237,146
Peel	14,675	12,925	14,675
Lachlan	307,149	198,952	307,149
Macquarie	386,311	208,177	386,311
Far West	-	-	-
Murray	1,934,830	1,534,667	1,934,830
Murrumbidgee	1,915,848	1,652,624	1,915,848
North Coast	992	992	992
Hunter	128,067	105,752	128,067
South Coast	5,831	5,831	5,831

10.3 Entitlement volumes and usage for regulated rivers

In addition to consumption forecasts, to set prices for regulated rivers, the Tribunal requires the High Security Entitlements and General Security Entitlements for each valley.

State Water's submission sets out its view of the High Security Entitlements and General Security Entitlements in each valley as of July 2005. Entitlement data is maintained by DNR through its entitlement holder register and database, which includes 2005 billing data. The Tribunal reviewed State Water's forecasts and made some adjustments for errors.

Table 10.6 sets out the information submitted by State Water and the Tribunal's findings on the entitlements to be used to set prices for the entire 2006 determination period.

Table 10.6 High Security and General Security Entitlements submitted by State Water versus Tribunal's findings

Region/river valley	State Water's submission		Tribunal's findings	
	High Security Entitlement ML	General Security Entitlement ML	High Security Entitlement ML	General Security Entitlement ML
Border	2,740	263,239	3,107	263,328
Gwydir	21,439	509,917	21,439	509,917
Namoi	8,519	255,936	8,519	255,936
Peel	17,277	30,878	17,378	30,383
Lachlan	58,582	620,853	57,144	633,951
Macquarie	42,077	631,526	42,095	631,526
Far West	-	-	-	-
Murray	416,801	1,864,307	252,083	2,029,307
Murrumbidgee	573,087	2,190,856	358,552	2,414,307
North Coast	103	8,835	127	9,088
Hunter	70,383	128,562	70,694	137,955
South Coast	878	13,949	903	14,014
Total	**1,211,886**	**6,518,858**	**832,041**	**6,929,712**

For the purposes of setting prices for this determination, the Tribunal has used the 2005 licensing data supplied by DNR to calculate entitlements for regulated rivers. The Tribunal has undertaken an extensive review of the licensing data and considers that it more accurately reflects entitlements within the regulated rivers.

10.4 Entitlement volumes and usage for unregulated rivers

To set DNR prices for unregulated rivers, the Tribunal requires entitlements for irrigators and on entitlements, usage and licence numbers for Town and Industry. DNR did not address entitlements and usage data in its submission.

However, this information can be calculated from licensing data. DNR has provided 2005 licensing data, which the Tribunal has used to calculate entitlement volumes for irrigation licences on un-regulated rivers. Where appropriate, the volumes have then been adjusted for expected cuts in allocations.

DNR uses surveys to obtain usage volumes from Town and Industry customers, and the last survey was conducted in 1999.[55] In the absence of more recent data, the Tribunal has used data for licence numbers and volumes for Town and Industry users on unregulated rivers provided by DNR for the 2001 determination.

Table 10.2 (earlier) sets out the Tribunal's findings on these parameters which have been used to set prices for the 2006 determination period.

55 The 1999 survey was conducted by the (then) Department of Land and Water Conservation.

10.5 Entitlement volumes and usage for groundwater

To set DNR prices for groundwater, the Tribunal needs to decide on entitlements and usages for each valley. At the time of the Draft Report, DNR had not provided forecasts of this information in its submission, nor did it address entitlements and usage data. Therefore, the Tribunal had calculated this information from licensing data provided by DNR.

In response to the Draft Report, the Lower Macquarie Groundwater Irrigators Association raised concern with the groundwater volumes.

Since the Draft Report, DNR has checked the Tribunal's calculated groundwater volumes and advised that it is inaccurate, particularly in relation to the allocation to valleys. DNR advised that the 2004/05 billing data (provided by State Water) is:

- now available
- the most verifiable data set available
- consistent with the 2003/04 billing data and
- the information used for the 2005 determination (also provided by State Water).

The Tribunal agrees with DNR that the actual 2004/05 billing data is more accurate. In addition, it believes that use of this data should meet the concerns raised by Lower Macquarie Groundwater Irrigators Association.

Table 10.3 (earlier) sets out the Tribunal's findings on the parameters that have been used to set prices for the 2006 determination period. Table 10.7 below compares the data used for the Draft Report and the Final Report. While the total entitlement and usage volumes are similar, there are large differences for some valleys. For example, the entitlement volume in the Murray valley is 23 per cent lower than in the Draft report, while the entitlement volume in the Murrumbidgee valley is 16 per cent greater.

Table 10.7 Comparison of Draft and Final Report Entitlement volumes and usage for Groundwater

	Entitlement (ML)			Usage (ML)		
	Draft report	Final report	Difference	Draft report	Final report	Difference
Barwon	711,904	648,832	-9%	299,004	233,469	-22%
Central West	682,208	716,707	5%	205,611	281,337	37%
Far West	0	1,831	na		1,188	na
Murray	507,491	388,902	-23%	213,013	85,361	-60%
Murrumbidgee	526,270	611,158	16%	216,833	332,000	53%
North Coast	38,206	48,143	26%	48	-	na
Hunter	131,179	141,100	8%		-	
South Coast	34,671	33,122	-4%		-	
Total	**2,631,929**	**2,589,796**	**-2%**	**934,509**	**933,356**	**0%**

No information on usage volumes was available for the draft report, and were calculated to be 50 per cent of the entitlement volumes in managed areas.

11 STRUCTURE OF BULK WATER PRICES

Once the Tribunal has assessed how much revenue needs to be recovered from users for each agency (discussed in Chapters 6 to 9), and the volume of water likely to be sold (discussed in Chapter 10), it then considers the appropriate price for each bulk water service in terms of:

- the structure of prices, and whether changes should be made to the components within each price and the balance between these components
- the level of the various price components.

This chapter discusses the Tribunal's findings on the structure of prices, while Chapter 12 focuses on the level of prices. An overview of the current structures for bulk water prices is set out on Table 11.1.

The Tribunal considered a range of issues related to the structure of bulk water price, in response to stakeholder submissions and its own analysis, including:

- the potential for a minimum bill for activities associated with water sources
- for regulated activities:
  - rebalancing the entitlement and usage charges for State Water's river charges
  - the appropriateness of the premium for high security entitlements
  - the continuation of the wholesale discount to irrigation corporations
- charging for conveyance licences
- the structure of the Fish River Scheme charges
- for unregulated activities:
  - restructuring the irrigator tariffs based on entitlements only
  - restructuring the town and industry charges based on entitlements only
- phasing out of groundwater base charge ($ per property)
- changing the structure of transaction fees
- charging uniform charges across valleys
- charging for Adaptive Environmental Water (AEW)
- charging for floodplain harvesting licences
- charging for 'tagged' water.

The Tribunal's considerations and findings on each of these matters are discussed below.

11.1 Overview of current bulk water prices

An overview of the current structures for bulk water prices is shown in Table 11.1.

Table 11.1 Overview of current structure of bulk water prices

Activity	Customer	Main charge	Supplementary charge	Supplementary charge
Regulated rivers (State Water and DNR)	Licensed users, stock and domestic users	Entitlement	High security	Normal
				Wholesale discount
			General security	Normal
		Usage		Wholesale discount
	Yanco Creek System	Entitlement		
Unregulated rivers (DNR)	Irrigators	Area based	Subject to a minimum bill	
	Town and industry - entitlement not allocated	Fixed charge per licence		
		Usage charge		
	Town and industry - entitlement allocated	Entitlement charge		
		Usage charge		
	Hunter Water Corporation	Addition of entitlement and usage of two part tariff applied to extraction		
	Sydney Catchment Authority	Addition of entitlement and usage of two part tariff applied to extraction		
Groundwater (DNR)	Managed area	Base charge		
		Entitlement charge		
		Usage charge		
	Unmanaged area	Base charge		
		Entitlement charge		
Transaction fees	All customers	Various		

11.2 Establishment of a minimum annual bill for bulk water services

The Tribunal's decision is to set a minimum annual bill of $60 for regulated, unregulated and ground water bulk water services, provided by DNR.

The Tribunal's draft decision was to abolish the minimum bill for unregulated rivers and phase out the base charge for ground water. The effect of this was to reduce the bills of small volume customers, of which there are large numbers particularly in the coastal valleys. DNR indicated in its response to the draft determination that, where bills are too small, customers may simply not be charged.

The Tribunal was aware of the existence of a number of small volume customers when it made its draft decision, as was DNR when it proposed in its original submission that the ground water base charges be abolished. However, neither the Tribunal nor DNR were at that stage aware of the likely growth of the number of Water Access Licences (WALs) with zero or small shares.

Zero and small share WALs are licences with very little or no entitlement volume attached to them. These licences were created specifically to facilitate trading, by allowing water users to access water on a temporary basis without owning permanent access rights (unit shares) to water. Small and zero share WALs are created either by application to DNR, or when existing licence holders sell off their unit shares to other licence holders. DNR expects these licences to grow rapidly.

In its submission in response to the Draft Report, DNR noted that transaction fees recover the administrative costs of processing an application for, and creating, a small or zero share WAL. However, it incurs ongoing administration costs because of its responsibility to maintain the licensing database and monitor licence conditions. The Draft Report prices did not provide a mechanism to recover these costs, and DNR therefore proposed the Tribunal introduce a minimum bill for all water sources.

The Tribunal is satisfied that DNR incurs ongoing administration costs for small and zero share WALs. It therefore considers that a minimum charge should be applied to all water sources, including zero and small share water access licences.

11.3 Regulated rivers – balance between State Water's entitlement and usage charges

The Tribunal's decision is to restructure charges on regulated rivers so that 40 per cent of expected revenue is recovered from fixed charges and 60 per cent from usage charges by 2009/10, except for the North Coast and Hunter valleys where usage charges will be set to recover 40 per cent of revenue by 2009/10.

11.3.1 The Tribunal's draft finding and rationale

Under the current price structure there is a wide variation in the proportion of revenue earned from entitlement charges compared to usage charges for regulated rivers in different valleys. Currently, the south of the state has a higher ratio of fixed charges while the north has a higher ratio of usage charges. For example, for regulated river customers the usage charge (expressed as a percentage of the low security entitlement charge) varies from 26 per cent in the Murrumbidgee valley to 135 per cent in the Macquarie valley.

The Tribunal's draft finding was to restructure charges on regulated rivers in all valleys so that 40 per cent of expected revenue is recovered from fixed charges by 2009/10.

This finding reflected the Tribunal's consideration and balancing of the following factors:

1. ***State Water's operating licence requirements***. Clause 10.2 of the operating licence requires State Water to recover 40 per cent of expected revenue from fixed charges by 2009/10. State Water proposed to restructure its charges on regulated rivers so that 50 per cent of expected revenue is recovered through fixed charges and 50 per cent through variable charges in 2006/07 and 2007/08, moving to 40 per cent through fixed charges and 60 per cent through variable charges by 1 July 2008. It also proposed that these ratios be uniform across all valleys.
2. ***Conservation signal*** Environment groups support having as large a variable component as possible to provide a strong signal about water conservation.
3. ***State Water revenue variability and financial viability*** Increasing the variable charge is likely to increase State Water's revenue variability and in turn affect the agency's financial viability.
4. ***Impact on customers*** Customer bills are affected by increasing the proportion of revenue which is recovered through variable charges.

11.3.2 Submissions made to the Draft Report

State Water supported the Tribunal's draft finding except for prices in the coastal valleys. It believes that customers in the Hunter valley prefer lower variable charges given the large number of 'sleeper and dozer[56]' licences in this valley. At the public hearing on 30 June 2006, State Water supported a 60 per cent fixed 40 per cent usage ratio for the coastal valleys and suggested that the Tribunal consider a higher fixed revenue component for all valleys that are significantly under-recovering.

In response to the Draft Report, NSWIC and GVIA supported the uniform application of the 60:40 fixed to variable usage charges across all valleys. The Coastal Valleys Customer Service Committee (CVCSC) argued that the factors driving efficient and cost-effective water use on the coast are different to those in the western valleys and that a 60 per cent entitlement and 40 per cent usage based charge best serves the interests of customers, State Water and NSW Treasury for the coastal valleys (North Coast, Hunter and South Coast valleys).

---

56 This term is used by irrigators to describe customers that hold irrigation licences but rarely make use of their entitlement.

Bega Cheese argued against the CVCSC proposal on the South Coast. It believes that the lower allocations and lower numbers of sleeper and dozer licences result in irrigators on the South Coast preferring a lower fixed charge proportion.

11.3.3 The Tribunal's analysis and finding

The Tribunal reviewed its draft finding in response to submissions and information provided by stakeholders following the Draft Report.

The Tribunal has considered the arguments raised by irrigator groups on the North Coast and Hunter valleys about the need to increase the fixed charge to provide disincentives for sleeper and dozer licences. Irrigators argue that holders of sleeper and dozer licences reduce the effective availability of water in their valley. Therefore, they proposed that charges be set based on 60 per cent fixed and 40 per cent usage; noting that this would still represent a greater emphasis on usage charges compared to current tariffs.

The Tribunal agrees with these arguments given that usage in these valleys is low compared to the level of entitlements. It also notes that these sleepers and dozers should contribute an equitable contribution to the largely fixed costs of maintaining State Water's infrastructure. Therefore, the Tribunal's finding is that a ratio of 60 per cent fixed to 40 per cent usage is more appropriate for the North Coast and Hunter.

The Tribunal has decided to maintain its draft finding of ratio of 40 per cent fixed for all other regulated valleys.

The Tribunal notes that State Water argues that the 40 per cent usage proportion be adopted in all valleys that are below cost recovery. This would mean lowering the proportion recovered through fixed charges in the South Coast and Peel. However, irrigators supported its draft findings for the South Coast and that no arguments against those draft findings have been received from irrigators in the Peel. Therefore, the Tribunal's finding is to maintain the proportion of revenue to be recovered in the South Coast and Peel valleys.

Therefore, the Tribunal's finding is to set prices based on the proportion of revenue from variable charges by 2009/10 shown in Table 11.2.

Table 11.2 Proportion of revenue from fixed charges by valley

Valley	Proportion revenue from fixed charges
Border	40.0%
Gwydir	40.0%
Namoi	40.0%
Peel	40.0%
Lachlan	40.0%
Macquarie	40.0%
Murray	40.0%
Murrumbidgee	40.0%
North Coast	60.0%
Hunter	60.0%
South Coast	40.0%

11.4 Regulated rivers – DNR's entitlement versus usage charges

The Tribunal's decision is to not accept DNR's proposed tariff restructure for regulated charges to be based on entitlements only, or to apply uniform tariffs across the valleys. The Tribunal's decision is to maintain a two-part tariff which varies by valley.

DNR proposed to restructure its tariffs based on entitlements only, and to charge a uniform tariff across all valleys or, for regulated rivers, regionally grouped valleys.

DNR proposed that all WRM costs be recovered through an access charge for all water sources and customer classes. This charge would be levied on the megalitres of the customer's entitlement (or unit shares where water sharing plans are in place). DNR argued that its costs are fixed and do not vary with the level of water consumption (and, in fact, are inversely proportional to the amount of water consumed), so usage-based charges are not cost reflective. For example, in drought conditions when water extraction is limited it has to undertake more work to monitor river systems. DNR also argued that its proposal is consistent with the NWI, as irrigators still face variable charges through the State Water component of the bill.

The Tribunal's analysis of the arguments for and against DNR's proposed entitlement charge is shown in Table 11.3. The Tribunal notes that its assessment is also relevant to DNR's proposed restructure of its charges for unregulated river charges (section 11.8) and its groundwater tariffs (section 11.9).

Table 11.3 Tribunal's assessment of DNR's proposal to abolish usage charges

Arguments for DNR's proposal	Arguments against DNR's proposal
WRM management is not related to the specific volumes used from year to year	May conflict with COAG principles that require consumption based pricing
WRM costs do not vary with usage, and may indeed be higher in times of drought, when usage is lower	Licence holders will have less control over their bills (due to a lower/no usage charges)
A fixed WRM charge may encourage trading (as it becomes more expensive to hold onto licences whose entitlements are not used)	Licence holders bear all the risk that is associated with varying usage

The Tribunal believes that the current tariff structure appropriately allocates risks between users and DNR. It believes that DNR's proposal to recover all of its revenue from an entitlement only basis will place too much volumetric risk on users.

11.5 Regulated rivers - premium for high security entitlements

For State Water, the Tribunal's finding is that there should be a two tier entitlement charge; holders of high security, local water utility and stock/domestic access licences should be charged at a premium over holders of general security access licences as shown in Table 11.4.

For DNR, the Tribunal's finding is that the same unit entitlement charge should be charged to all water access licence holders on regulated rivers, regardless of whether they are general security or high security licences.

Water access licence holders pay State Water and DNR an annual charge related to the volume of the entitlement, independent of usage, and a usage charge related to the volume of water extracted. Historically, for both State Water and DNR, the same usage charge has applied to high security and general security entitlement licences. However, the annual charge for high security entitlements has been set at a premium compared to the general security charge, with the level of premium varying by valley.

In its submission, DNR proposed that its charges not include a high security premium, so that all entitlement holders would pay the same unit rate. It argued that its water resource management activities were not affected by the security of the licences issued and that it was not appropriate to charge a high security premium to holders of high security.

State Water proposed to maintain the current two tier charging structure and to increase the premium paid by high security licence holders. It argued that the ratios should be calculated based on conversion rates contained in the water sharing plans where these are available, with a multiplier of two applied to reflect the costs associated with the length of time which water needs to be held in storage to deliver high security supplies. For valleys where water sharing plans are not in place, State Water proposed the ratios based on their understanding of the systems.

Most stakeholders were in favour of a price premium for high security licences and most generally supported State Water's methodology of using the entitlements reflected in the water sharing plans as the basis for calculating the high security premium. However, many stakeholders, including Macquarie Generation and Macquarie River Food & Fibre, objected to State Water's proposal to multiply the ratio by a factor of two. In addition, in response to the Draft Report, NSW Irrigators' Council (NSWIC) and Western Murray Irrigation argued that the application of the security of supply principle needs to be revisited for the Murray and Murrumbidgee valleys. Irrigators in the Hunter also requested the Hunter premium be reconsidered to reflect special provisions in that valley's water sharing plan. DNR has also advised the Secretariat of an error in the original WSPs published by DNR for the Murray.

The Tribunal considered how the security of supply varies between licences, whether the agencies' activities relate to security of supply and the basis on which a high security premium should be set. Its considerations and findings on these matters are discussed below.

11.5.1 Does the security of supply varies between licences?

Owners of high security licences normally receive 100 per cent of their entitlement, in all but the severest droughts. Owners of general security licences are only able to extract some proportion of their entitlement volume each year, depending on the amount of water available after high security entitlements have been allocated. The proportion of entitlement volume received by general security licences varies between valleys. This reflects the hydrological differences between catchments, the volume of entitlements originally allocated and the capacity of the storages in each valley.

In response to the Draft Report, stakeholders noted that there are significantly different outcomes in some valleys which need to be taken into account. NSWIC argued that the Snowy Hydro's minimum release obligations may create different and inequitable outcomes for Murray and Murrumbidgee valleys, than those experienced in other regions. Western Murray Irrigation also argued that the Snowy Hydro obligations affected high security water.

The Tribunal concluded that high security licence holders receive a higher level of service to general security licence holders, but this difference in the level of service varies between valleys.

11.5.2 Do the agencies' activities relate to security of supply?

The Tribunal then considered the role of State Water and DNR in providing the security of supply service.

In relation to State Water, the Tribunal considers that the high security licence holders do receive a higher standard of service, delivered through State Water's assets and activities. Therefore, it considers that a differentiated price, including a high security premium, is appropriate for State Water.

In relation to DNR, the Tribunal agrees that DNR's water resource management activities are not related to delivering security of supply services and that its costs are not affected by the licence classification. Therefore, its finding is to accept DNR's proposal for the same entitlement charge to apply to all water access licence holders, irrespective of the security of supply classification.

11.5.3 How should a high security premium be set?

In relation to the level of premium for State Water, the Tribunal assessed options for calculating the premium for each valley including a cost based approach, a value based approach and a security of supply-based approach. Where possible, it favours the security of supply-based approach as proposed by State Water and endorsed by most stakeholders.

The security of supply approach uses information on licence volumes and the overall catchment plan limits set out in the water sharing plans to calculate the relative security of general security entitlements and high security entitlements.

This approach has several benefits including that it:

- is simple
- is transparent - the information is publicly available
- is supported by most stakeholders
- accounts for differences in the security of supply varies between each valley
- is consistent with the approach currently being favoured by the MDBC in determining the 'exchange rate' for interstate trades.

The Tribunal accepts State Water's proposal that the security of supply be calculated using the ratios implicit in the water sharing plans, where these are available. Where water sharing plans are not in place, the Tribunal believes that the most appropriate approach to calculating the ratios needs to be considered on a valley basis.

The Tribunal does not believe there is sufficient basis to justify a multiplier of two to the water sharing plan ratios and therefore rejects State Water's proposal to adjust the security premium to reflect two years of additional storage requirements. It does consider that there should be a reasonable difference between the high security and general security charges based on the implied water sharing plan ratios. In its Draft Report, the Tribunal adopted a minimum premium of 1.5 times. A number of stakeholders raised concerns about this ratio and suggested that a lower value was more appropriate. The Tribunal agrees that a lower ratio may better reflect the difference in service delivery and finds that a minimum ratio of 1.25 should apply.

In relation to the premium ratios for each valley:

- For the Hunter valley, the Tribunal has considered information provided in submissions to the Draft Report on a Note to Rule 55 in the Hunter water sharing plan. This note specifies a conversion factor for high to general security water of 3. The Tribunal agrees that the ratio should reflect this specified conversion factor rather than be calculated from the entitlement volumes.
- For the other valleys with water sharing plans in place, the Tribunal has calculated the ratio based on the entitlement data and plan limits set out in the plans, taking account

of the corrected information provided for the Murray valley. The Tribunal has then applied a minimum ratio of 1.25. This approach applies to the Gwydir, Namoi, Lachlan, Macquarie, Murrumbidgee, and Murray valleys.

- For the Border and Peel valleys, where there are no water sharing plans in place, the Tribunal has maintained the approach applied in the Draft report which used entitlement and usage data from State Water's billing system.
- For the North Coast and South Coast valleys, where there are no water sharing plans in place, since the Draft Report, the Tribunal has further considered the characteristics of these valleys which are significantly smaller, in terms of consumption and entitlement volumes, than the other regulated river valleys. These valleys also hold a very small proportion of High Security water. In the North Coast, general security users have received around 90 per cent of their allocation over the last three years, implying a ratio close to 1. The Tribunal has applied the minimum ratio of 1.25 should apply to North Coast. In the South Coast, information provided by State Water suggests that general security users expect to receive around 60-80 per cent of their allocation; 60 per cent implies a ratio of 1.7.
- For Patterson, the Tribunal notes that while the Draft Determination identified a separate premium for the Patterson, this system is part of the Hunter regulated river valley and users are currently charged at Hunter prices. Therefore it finds that a separate premium is not appropriate for Patterson and the Hunter premium should apply.

Table 11.4 below compares the current high security premium ratios, State Water's proposed ratios, the calculated water sharing plan ratios, the Tribunal's draft findings and the Tribunal's finding.

Table 11.4 Tribunal's finding on high security to general security entitlement charge ratios for State Water

Valley	Existing ratios	SWC submission	WSP ratios	Tribunal's Draft Finding	Tribunal's Findings
Border Rivers	1.5	2.56	1.28	1.50	**1.28**
Gwydir	1.5	3.50	1.81	1.81	**1.81**
Namoi	1.5	2.22	1.11	1.50	**1.25**
Peel	2.3	13.46	6.73	6.73	**6.73**
Lachlan	1.5	3.76	2.45	2.45	**2.45**
Macquarie	1.3	4.94	1.88	1.88	**1.88**
Murrumbidgee	1.1	1.30	1.63	1.63	**1.63**
Murray	1.1	1.17	1.23	1.50	**1.25**
North Coast	1.4	2.00	1.00	1.50	**1.25**
Hunter	1.3	4.50	2.22	2.22	**3.0**
South Coast	1.3	2.00	1.00	1.50	**1.7**
Patterson	1.4	3.00	1.50	1.50	**n/a**

11.6 Regulated rivers - rebates to irrigation corporations

The Tribunal's decision for State Water is to remove the wholesale discount and to provide a rebate to large irrigation companies and districts (ICD) against their total annual bills.

The Tribunal's decision for DNR is to phase out the wholesale discounts over the 2006 determination period.

DNR and State Water proposed the removal of wholesale discounts. These discounts currently range from 40 per cent in the Murray valley to 29 per cent in the Murrumbidgee valley and 27 per cent in the Lachlan valley and are reflected as a percentage discount on the entitlement charge.

The National Water Commission's review of the Government's compliance with the NWI concluded that:

> Wholesale bulk water discounts are currently available from State Water to irrigation corporations. These discounts are in effect a cross-subsidy from river pumpers to the irrigation corporations. To this end, State Water considers the wholesale discounts inappropriate and wishes to eliminate them over the next price path.
>
> On the basis of the above information, and pending the price determination due to be completed by IPART in the first half of 2006, the Commission considers that New South Wales has made some progress towards meeting its COAG commitments to report the level of cross-subsidisation and to phase out these subsidies over the next price path.[57]

State Water and DNR proposed to remove the discounts to irrigation corporations on the basis of cost reflectivity. They argue that there are no cost savings to supply these large customers and the discounts are not warranted.

In addition, DNR noted that the purpose of these discounts was to compensate the private irrigation companies for information they provided to State Water and DNR to meet their water delivery activities. However, it no longer performs the water delivery activities and the irrigation companies do not supply it with information supporting those activities. Therefore, it argued that these discounts should be removed. It also noted that in the event that it requires information from the irrigation companies in the future, it will enter into appropriate service agreements to cover the cost of providing the information.

The ICDs that currently receive the discounts argued strongly for maintaining the wholesale discount. NSW Irrigators' Council also supported this position. These stakeholders argued that the irrigation corporations currently provide a range of services to State Water and DNR, which are not provided by individual licence holders and which help to reduce the agencies' costs of providing water. They also argued that there are economies of scale in delivering bulk water to a single user than, for example, 1000 users. A number of other irrigator groups argued against the wholesale discount, putting the view that they have been cross subsidising the irrigation corporations.

---

57 National Water Commission, *2005 National Competition Policy assessment of water reform progress*, March 2006, p 2.46.

As input to its Draft Report, the Tribunal engaged CIE to determine:

- whether the discounts are justified
- if so, the level of discount that should be applied or what other pricing arrangements could be put in place.

CIE concluded that there is some justification for providing the ICDs with a rebate, although this is likely to be substantially less than the value of the current discount. Further, the rebate would only apply to the State Water component of their charges, as there is no justification for a rebate related to the DNR component. CIE's arguments in support of maintaining some level of rebate include:

- lower costs in delivering water to the ICDs which largely relate to billing and metering, but also some river operations' activities (these costs only relate to the State Water component of the business)
- system wide benefits of some of the river operations' activities undertaken by the ICDs which reduce State Water's costs of running the overall system
- system wide benefits of some of the environmental and licensing information collected by the ICDs as part of their business operations.

The Tribunal consider that the ICDs should get a rebate in recognition of their lower costs of service delivery and the system wide benefits that they provide. The CIE advised that the system wide benefits of ICDs activities are likely to vary among the ICDs. For example, a small irrigation corporation or private irrigation district is unlikely to generate the same level of system wide benefits as might be generated by Murray Irrigation and Murrumbidgee Irrigation.

The Tribunal has determined fixed dollar annual rebates as shown in Table 11.5. It believes that the most appropriate basis for recognising these costs is to apply a fixed dollar rebate off the total annual bill paid by the ICDs rather than as a discount on charges.

The Tribunal notes that the differences between the rebates shown and those in its Draft Determination reflect changes in State Water's and MDBC's operating costs, which are inputs to the rebate calculation.

Table 11.5 Tribunal's calculated rebate for annual bills ($'000, Real 2006/07)

Valley	Rebate on customer driven costs	Rebate for system wide benefits	Total rebate
Jemalong	85	0	85
Murray Irrigation	560	858	1,418
Western Murray	31	0	31
West Corurgan	31	0	31
Moira	14	0	14
Eagle Creek	6	0	6
Murrumbidgee Irrigation	353	547	901
Coleambally Irrigation	151	234	385
Total	**1,231**	**1,640**	**2,872**

Note: Based on State Water's costs (including the MDBC costs), adjusted for Halcrow/MMA's efficiency adjustment.

Given that CIE found no reliable basis for allocating DNR's WRM costs on a differential basis, the Tribunal has decided to phase out the current wholesale discounts over the 2006 determination period. It believes that the phasing out will minimise the impact on the ICDs bills.

11.7 Fish River Scheme price structure

The Tribunal's decision is to maintain the current price structure for the Fish River Scheme.

The Fish River Scheme sources water primarily from Oberon Dam and supplies bulk water to four major customers – Delta Electricity, Lithgow City Council, Oberon Council and the Sydney Catchment Authority. It also provides water to approximately 240 smaller customers that include non-irrigation farmers and some industrial customers (such as collieries) that use the water for domestic purposes. Unlike most of the water that State Water supplies, the water from the Fish River Scheme is supplied to customers through pipes.

Historically the Minister has set the Fish River Scheme bulk water prices. However, the four large customers, through the FRWSS Customer Council, have had a significant influence on the capital and operating expenditure proposals, and consequently prices.

The current price structure for the Fish River Scheme comprises a fixed charge based on a minimum annual quantity and a two tiered usage charge up to and above the minimum annual quantity.

On balance, the Tribunal supports the current price structures for the Fish River Scheme, given the significant customer input into the price setting process.

11.8 Unregulated rivers – tariff structure

The Tribunal's decision is that:

- **Irrigators with a meter and entitlement based licence can elect to be charged on the same two-part tariff as for town and industry customers on unregulated rivers.**
- **Irrigators without a meter, or who elect not to be charged on a two part tariff, will be charged as follows:**
    a. **Irrigators in the Far West will continue to be charged area based charges until their new entitlement volumes have been allocated under the Barwon-Darling Cap Management Strategy.**
    b. **Irrigators in other areas, with entitlement volumes, will pay an entitlement only charge.**
    c. **Irrigators in other areas, without entitlement volumes, will continue to be charged area based charges.**

The Tribunal has not accepted DNR's proposal for uniform charges across valleys or to restructure the town and industry charges.

The Tribunal's decision is that for town and industry licences with entitlements, the two-part charge will be maintained. For town and industry licences that do not yet have entitlement volumes, the fixed charge will be maintained in real terms, and the valley usage charge will be increased at the same rate as the increase in the two-part tariff applicable to that valley.

DNR proposed to replace its irrigation area-based charge, and the town and industry base plus usage charge and two-part tariff, with an entitlements only charge. It is also proposed a uniform WRM charge be levied across all valleys except the North Coast and South Coast, and that this charge be set to achieve full cost recovery by 2010/11.

Stakeholders did not unanimously support DNR's proposals. Several irrigators on unregulated rivers argued strongly against a single fixed access charge. They argued that their river systems are highly variable and they only receive water in a small number of years. Therefore, they believe that in most years they do not receive a service for the money that they pay. They also noted that they have installed meters on the assumption that there will be a usage component to the charge, as indicated by the agency during the 2001 review and proposed by the Tribunal in its 2001 determination.

Irrigator groups also raised issues that were specific to their region. For example, in Hunter river systems there are apparently a large number of 'sleeper' licences such that a high usage component of tariffs would shift the costs to the regular extractors.

The environment groups have some sympathy for DNR's position because of the fixed nature of its costs and the fact that DNR's costs may be inversely proportional to water use.

The Tribunal considered whether to abolish area-based charges for irrigators, and fixed charges for town and industry licence holders. Its considerations and conclusions are outlined below.

The Determination makes explicit that DNR is able to charge for the extraction of water from an unregulated river by holders of stock and domestic licence. The Tribunal understands that DNR has not in the past charged for such extractions.

11.8.1 Charges for irrigators with meters

In its Draft Report, the Tribunal noted that the introduction of a two-part charge for all irrigators on unregulated rivers in future determinations would offer advantages in terms of demand management. As this will be possible only once usage is metered, it encouraged DNR to expedite its metering program on unregulated rivers.

The Tribunal understands that irrigators are responsible for installing their own meters. Given this, and after considering responses to the Draft Report, the Tribunal has decided to allow irrigators to elect to go onto a two-part tariff for the following reasons:

- it will encourage metering
- it will provide demand management signals to extractors of water
- it is consistent with the NWI which encourages consumption based pricing
- it is consistent with the Tribunal's decision on DNR's prices for extraction from other sources where a two-part charge applies: regulated rivers, town and industry customers on unregulated rivers, and extraction in Monitored Groundwater Management Areas.

The Tribunal has decided to apply the same two part tariff as for town and industry customers on unregulated rivers.

The Tribunal is aware of the potential impact on cost recovery of moving to a two-part tariff. It has therefore set prices after making allowance for some movement onto the two-part tariff.

11.8.2 Charges for irrigators without meters or not electing a two part tariff

The Tribunal notes once licences have been issued under the WMA, DNR can no longer charge irrigators on an area basis because the licences relate to an entitlement volume and not an area. In addition, it is not possible to introduce a uniform two-part tariff for irrigators on unregulated rivers in the short term, given that DNR estimates that only about 1 per cent of licences are metered. Most irrigators with licences under the Water Act have been allocated an entitlement volume. Therefore, the Tribunal believes that irrigators with Water Act licences for the 2006 determination period should be charged based on these entitlements.

DNR expects entitlement volumes in the Far West to be reduced by more than 65 per cent during the 2006 determination period. In other valleys, no reductions are expected. The Tribunal believes there is a need to minimise the impact on bill variability.

The Tribunal's decision is that irrigators without a meter, or electing not to be charged on a two-part tariff, with entitlement volumes, except in the Far West, will pay an entitlement only charge. Irrigators with no entitlement volumes will continue to be charged area based charges. Except for those irrigators with meters who elect to be charged on a two part tariff, all irrigators in the Far West will continue to be charged area based charges until their new

entitlement volumes have been allocated under the Barwon-Darling Cap Management Strategy.

11.8.3 Fixed charges – town and industry

The Tribunal's decision is that the tariff structure for town and industry licence holders with entitlement volumes will continue to be a two-part tariff (with fixed and usage charges). The Tribunal believes this price structure significantly reduces the impact on the bills of town and industry users whose entitlements exceed their usage volumes. In setting the two-part tariffs, it believes that the ratio of entitlement to usage charges should remain at 60:40.

For town and industry licences that do not yet have entitlement volumes, the fixed charge is to be maintained in real terms, and the valley usage charge is to be increased at the same rate as the increase in the two-part tariff applicable to that valley.

11.9 Groundwater tariffs

The Tribunal's decision is to abolish the groundwater base charge. The existing managed areas entitlement and usage charge, and the unmanaged areas entitlement charge, will be maintained.

Groundwater customers in managed areas currently pay a base (fixed) charge per licence, an entitlement charge and a usage charge. Customers in unmanaged areas pay a lower fixed charge and the same entitlement charges, but no usage charge.

DNR proposed different entitlement charges for the managed and unmanaged areas to reflect the different costs for the services provided. It also proposed that the fixed charge per licence and the licence charges be abolished. Further, DNR proposed that valley charges be consolidated, so that a single charge be applied in all managed areas and another charge be applied in all unmanaged areas across all valleys. DNR's reasoning for this proposal is that WRM expenditure tends to vary from year to year across valleys as the focus of activity moves from one area to another.

Based on 2004/05 billing data, DNR generates about $4.0 million from its groundwater charges, an estimated 23 per cent of which comes from the base charge, 66 per cent from the entitlement charge and 11 per cent from the usage charge.

11.9.1 Base charge

Currently, irrigators pay an annual base charge of approximately $188 in managed areas and $81 in unmanaged areas.

The Tribunal's draft finding was to phase out the ground water base charge by 2009/10. The revenue that is lost from the base charges must be recovered from volumetric charges, and as a consequence these charges increase substantially. The Tribunal decided to phase out the base charges, rather than abolish them in 2006/07, to allow larger volume customers time to adapt to the higher volumetric charges.

In its response to the Draft Report, DNR claims that groundwater licences issued under the WMA are not legally linked to land or property, and therefore cannot be charged the base charge. Therefore, DNR prefers the base charge to be abolished in 2006/07, rather than

phased out as in the draft determination. The base charges are specified in "dollars per property to which the licence applies" in the draft determination.

The Tribunal has established with DNR that, when licences are converted from the Water Act to the WMA, one property account automatically becomes one licence.[58] The share allocation of the new licence will reflect the total entitlement volume on the property account. Any further consolidation or splitting of licences is voluntary.

Therefore, the base charges can continue to apply from 2006/07 to both Water Act and WMA licences holders, without any impact on bills and it is feasible to phase out the base charges provided that the base charge applies "per property account held under the Water Act and per licence held under the WMA."

The Tribunal has decided to phase out the annual base charge on groundwater by 2009/10.

11.10 DNR uniform charges across valleys

The Tribunal's decision is to not accept DNR's proposal for uniform charges across valleys.

DNR proposed that a uniform tariff be applied across some valleys, based on a regional grouping of valleys with similar unit costs of service provision. It stated that this approach will allow for tariff structures to be simplified with minimal cross subsidisation between valleys. It also stated that this approach, which is significantly different to the Tribunal's previous valley-based pricing approach, is more cost reflective as its activities may be spread across a range of valleys. However, the Tribunal's analysis shows that the available historical and forecast regulated costs do not support DNR's assertion that there will be minimum cross-subsidisation between valleys over a number of years. An analysis of both past and projected expenditure indicates that some valleys consistently attract more expenditure than others (per ML of entitlement).

Consolidating valley costs will arguably reduce the transparency of DNR's expenditure. The issue of transparency is of concern to a number of licence holders, and has been raised in a number of submissions, including that of the Department of Primary Industries.

11.11 DNR transaction fees

The Tribunal will set maximum prices for declared monopoly services under the WMA. Transaction fees relating to bulk water licences that are still covered under the Water Act (1902) will continue to be set under regulation by the Minister until the licences are converted to the WMA.

DNR's submission details a fee structure for water management consents that will cover:

- the issue of new licences, and dealings and other transactions on access licences
- the issue of new works and use approvals, and changes to the conditions on or the term of these approvals
- transactions on the Access Licence Register payable to Land and Property Information.

[58] For example, a farmer with one property account with four (WA) bore licences would be issued with single WMA licence.

DNR previously imposed fees for transactions made under the *Water Act 1912*. With the implementation of water sharing plans under the WMA, a new water management consents regime has been introduced. Conversion to the new licence system involves replacing the Water Act entitlements with the WMA water access licences and approvals. Some services newly introduced under the WMA, which did not have an equivalent charge under the Act, will have fees imposed. DNR believes that fees for these transactions should recover the full costs involved.

The WMA requires the Tribunal to set maximum prices for declared monopoly services. Transaction fees relating to bulk water licences that are still covered under the Water Act (1902) will continue to be set under regulation by the Minister until the licences are converted to the WMA.

11.12 DNR large utilities' licence fees

The Tribunal's finding is that given the nature of the services involved, and that utilities are adequately able to negotiate a commercial outcome with DNR, large utility licence fees should be set by negotiation between DNR and the major utilities.

DNR currently charges licence related fees on a cost recovery basis to Sydney Catchment Authority, Sydney Water Corporation, Delta, Eraring Energy, Macquarie Generation and Hunter Water Corporation. While the services provided are a monopoly service and therefore able to be set by the Tribunal, in previous determinations it decided that these fees should be negotiated between DNR and these large utilities.

Licences generally operate for five years and there are different functions that need to be carried out at different points of the cycle. Therefore, these fees fluctuate between years based on the service provided in that year with a peak occurring in the year the licence is due for renewal.

The Tribunal believes that given the nature of the services and that utilities are adequately able to negotiate with DNR, large utility licence fees should continue to be set by negotiation between DNR and the major utilities.

11.13 Adaptive Environmental Water charges

The Tribunal's decision is not to provide for Adaptive Environmental Water charges in the bulk water charging regime.

As circumstances allow, the Government may assign more water to the environment than the minimum levels provided for in the WSPs. To do this, DNR needs to create water for the environment. One option being considered is that of Adaptive Environmental Water (AEW), which could be purchased, sourced from savings, or provided by licence holders on a dedicated basis.

The Tribunal understands that the Government is considering the detailed framework for AEW, including whether such water would be subject to bulk water charged.

State Water argues that all AEW should be subject to the bulk water charging regime. DNR supports charging for AEW where derived from existing licences (ie, purchased and dedicated AEWs). However, it does not support charging AEWs created from water savings

on the basis that this water is currently being stored in dams to cover system losses. Therefore, there is no net change in State Water's costs, simply a reclassification of the water held in the storage.

Pending Government's decision, the Tribunal has decided to not separately set charges for AEW in the bulk water charging regime. This will mean that all water access licences will remain chargeable, including any licences associated with AEW. The Tribunal's determination would set the maximum price and DNR/State Water (with the Treasurer's concurrence) could choose to set a lower price for those licences associated with AEW once Government has made a final decision on AEWs.

11.14 Floodplain Harvesting Licences

The Tribunal's decision is that the charge for Floodplain Harvesting Licences be limited to the minimum fixed annual charge of $60.

Floodplain harvesting is the collection, extraction or impoundment of water flowing across floodplains for commercial purposes, including the irrigation of crops, pastures and horticulture and water taken for industrial purposes. Floodplain harvesting occurs in regulated and unregulated river systems, and in the coastal and inland catchments. Floodplain harvesting is most significant on inland rivers of the Murray-Darling Basin, particularly in the floodplain areas in the north west of NSW.

The *Water Management Act 2000* applies to all water diverted in NSW and requires that the extraction of water from all sources be licensed, including floodplains.

DNR is in the process of developing a policy for floodplain harvesting which will define, for example, the circumstances which water can be extracted from the floodplain and the structures that can be used to divert water from the floodplain. DNR intends to progressively issue licences for floodplain harvesting, with a target completion date of July 2009.

In its Draft Report, the Tribunal determined a 100 per cent user share for DNR's floodplain harvesting Activity C07-05. However, the Draft Report did not specifically allow DNR or State Water to apply a bulk water charge to floodplain harvesting access licences.

State Water has requested that these licences should be subject to bulk water charges. DNR's view is that floodplain harvesting access licences should be subject to a minimum charge as there will be an ongoing cost of managing these licences, and that users should only pay for the fixed component of the charge, given the difficulties in metering extractions from these licences.

State Water currently has limited involvement in activities related to floodplain harvesting, although it may play a greater role into the future.

The Tribunal considers that a charge should only apply on the DNR component of the price, given that State Water does not provide any services related to floodplain harvesting. Given the developing nature of the floodplain harvesting policy, there is insufficient information on which to base a detailed charging regime. Therefore, the Tribunal has decided that the minimum annual charge of $60 should apply to floodplain harvesting licences.

The Tribunal notes that given the progressive issue by DNR of the floodplain harvesting licences over the next 4 years, it will consider a detailed charging regime of these licences at the next determination. At that time, DNR will have issued all licences and finalised its rules for floodplain harvesting. The Tribunal will need to consider at that time whether these licences should form part of Regulated or Unregulated river charges or be included as a separate category.

11.15 Pricing of 'tagged' water for regulated and unregulated bulk water

The Tribunal has decided to grant users an option of electing for bulk water charges to be levied in a different manner if water has been tagged.

In its draft determination, the Tribunal decided that the entitlement price applies to the valley in which the licence is held and the usage price applies in the valley which the water is extracted. In the majority of cases, irrigators will hold a licence in the same valley from which the water is extracted and therefore subject to the prices in that valley. However, in the case of water that has been traded between valleys:

- the owner of the licence pays the fixed entitlement price in the valley that the licence is held
- the person extracting the water pays the usage price in the valley which the water is extracted.

The NSW Government is proposing that permanent transfers between valleys and states be managed via 'tagging' rather than via exchange rates. Tagging would mean that the Access Licence would remain in the source valley's licence register and continue to receive that valley's water allocation. Under this approach, the licence holder would pay the entitlement and usage charges in the valley in which the licence is held, even though the water may be extracted in another valley (or state). This is inconsistent with the Tribunal's draft decision discussed above.

This tagging system is being developed to deal with interstate trading of water and would avoid situations where State Water has to deliver water to South Australia but is unable to recover any charges from the user in South Australia.

The Tribunal has decided to grant State Water/DNR an option to levy bulk water charges in a different manner if water has been tagged.

12 PRICES FOR INDIVIDUAL SERVICES

As previous chapters have explained, the Tribunal sets prices by first making decisions on each agency's user-revenue requirement and forecast consumption, entitlements and licence numbers. It then determines the maximum prices for individual monopoly services, taking into account its decisions on the user-revenue requirement and forecast consumption, plus the matters it must consider under Section 15 of the IPART Act, and the contextual matters discussed in Chapter 2.

This chapter explains the Tribunal's decisions on the maximum prices to be charged by State Water and DNR for bulk water activities for the 2006 determination period. Section 12.1 provides an overview of the Tribunal's pricing decisions for each agency. Section 12.2 explains the Tribunal's approach in setting prices. Sections 12.3 to 12.11 explain the Tribunal's decisions on individual services for each agency.

12.1 Summary of decisions on pricing

The Tribunal's decision is to increase State Water's prices annually by an average of 5.8 per cent above inflation over the 2006 determination period.

In making its pricing decisions for State Water, the Tribunal has:

- Aimed to transition tariffs towards cost reflective levels over the 2006 determination period. This is achieved by increasing the entitlement and usage charges by a constant nominal amount (indexed by inflation) each year of the 2006 determination period to achieve the notional revenue requirement in 2009/10. Progress towards achieving cost reflective prices in the Peel, North Coast, Hunter and South Coast valleys will be limited given the Tribunal's decision to place a cap on average prices.[59]
- Set prices so that 40 per cent of expected revenue is recovered from fixed charges and 60 per cent from usage charges by 2009/10 except for North Coast and Hunter valleys where usage charges are set to recover 40 per cent of revenue by 2009/10.
- Set entitlement charges so that the high security to general security entitlement charge ratios shown in Table 11.4 are achieved by 2009/10.
- Abolished the 'wholesale discount' on the entitlement charge for the Irrigation Corporations and Districts (ICDs) and introduce a rebate on the total bill for these customers.
- Phased-in the billing of the entitlement charge on the conveyance licences for Murrumbidgee Irrigation and Coleambally Irrigation.

The Tribunal's decision is to increase DNR's prices annually by an average of 4.1 per cent above inflation over the 2006 determination period. Regulated river prices will increase annually on average by 0.1 per cent below inflation, unregulated river prices by 4.8 per cent above inflation and groundwater prices by 11.8 per cent above inflation.

[59] The Tribunal has applied the cap for the Peel, North Coast and South Coast by limiting the annualised real increases to 13 per cent over the 2006 determination period for a general security customer using water at long-term allocation levels. For the Hunter, the Tribunal has applied the cap by limiting the annualised real increase to 15 per cent over the 2006 determination period for a general security customer using water at long-term allocation levels.

In making its pricing decisions for DNR, the Tribunal has:

- Aimed to transition tariffs towards cost reflective levels over the 2006 determination period in under recovering valleys.
- Set prices in over recovering valleys so that the NPV of revenue no more than covers the NPV of costs over the determination period.
- Removed the high security premium on the entitlement charges for regulated rivers.
- Phased out the 'wholesale discount' on the entitlement charge for the Irrigation Corporations and Districts (ICDs).
- Phased-in the billing of the entitlement charge on the conveyance licences for Murrumbidgee Irrigation and Coleambally Irrigation.
- Placed a cap on average real annual price increases of 13 per cent for regulated rivers (which applies in the North and South Coast valleys only).
- Placed a cap on average real annual price increases of 15 per cent for unregulated rivers and ground water. In addition, increases in annual bills for these water sources have been capped at 20 per cent in real terms (for a constant volume).
- Set a minimum bill of $60 per annum for all water access licences.

12.2 The Tribunal's approach to setting maximum prices

The Tribunal adopted a 'staged' approach when analysing and setting maximum prices, which allowed it to explicitly consider the information provided through submissions and independent reviews, and to take account of its own analysis and the factors in Section 15 of the IPART Act.

This approach also recognised that, to make decisions about maximum prices, the Tribunal must first make decisions about how the user-share revenue requirement is translated into prices over the determination period and about the structure of those prices.

12.2.1 Key steps in the Tribunal's approach

The Tribunal's approach to setting the maximum prices involved the following five key steps:

1. Determine the agency's user-share revenue requirement (based on its findings on the cost building blocks) and its user-share cost ratios.
2. Determine the changes required to pricing structures and the feasible options for implementing these in the determination period.
3. Determine the price path over the determination period. The Tribunal's approach to determining a price path took account of its assessment of the gap (positive or negative) between current price levels and cost reflective prices for each valley. In general the Tribunal favoured a glide path approach. Under this approach, a single X-factor is set to ensure that prices change smoothly over the determination period, such that an agency's targeted revenue in the final year of the determination period is similar to its notional revenue requirement for that year, subject to any constraints placed by the Tribunal on the maximum rate of increase in any one year. Section 12.2.2 provides more detail on the Tribunal's approach.

4. Calculate actual prices for the options identified in Step 2, using the approach set out in step 3, then assess the implications of these prices in the context of the Section 15 factors. Specifically, this included considering customer impact, agency sustainability and economic efficiency:
   - in considering customer impact, the Tribunal looked at the magnitude of real price increases in 2006/07 compared to 2005/06, and over the whole determination period and the effect these increases on typical bills
   - in considering financial viability and sustainability of State Water, the Tribunal looked at 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
   - in considering economic efficiency, the Tribunal looked at the signals sent to customers and cost reflectivity.
5. Decide on the pricing structure and level for the 2006 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 revenue expected to be derived by prices is less than the Tribunal's calculated user-share revenue requirement.

Steps 1 and 2 are discussed earlier in this report. This chapter sets out the outcomes of steps 3 to 5, being the level of prices to be charged by State Water and DNR over the 2006 determination period.

12.2.2 Relationship between cost recovery and the price path

For its Draft Report, the Tribunal applied a glide path approach to determining the prices for bulk water services.

Submissions on the Draft Report noted concerns about over-recovery of prices in some valleys. In addition, concerns were raised about the extent to which over-recovering prices were consistent with NSW's commitments under the NWI.

The Tribunal has therefore further considered its approach to setting prices paths in the case of over-recovering and under-recovering valleys.

Following the Draft Report the Tribunal and its consultants have reviewed State Water's revised submission and have allowed some additional operating costs for State Water, as discussed in Chapter 7. The Tribunal has also reviewed the total MDBC costs to be included in bulk water prices and how these costs are distributed among valleys. The result of this review has been that the level of costs to be recovered from users in some valleys has increased compared to the Draft Report. The Tribunal has also set prices such that State Water's forecast revenue from tariffs for a given valley does not exceed the cost of supplying the services in a given year.

However, for DNR the forecast revenue from tariffs may exceed assessed costs in any given year, due to the large year on year variation in DNR costs which would result in pricing volatility if the 'immediate targeting' approach was used. As a result, the Tribunal finds that where DNR's revenue for a given valley is assessed as exceeding costs, prices should be set so that the Net Present Value (NPV) of costs is equal to the NPV of expected revenue from tariffs over the regulatory period.

For **under-recovering** valleys, the Tribunal notes that four valleys (Hunter, North Coast, South Coast and Peel) are substantially below cost recovery in regards the State Water component of the costs. The North Coast and South Coast valleys are also substantially below cost recovery on the DNR component of the costs. In order to achieve full cost recovery levels in these valleys price increases of several thousand per cent would be required. For example, in the draft determination by 2009/10 only 7 per cent of State Water's costs are recovered from tariffs in the North Coast valley. In the South Coast, 34 per cent of State Water's costs are recovered by 2009/10.

In these cases, the Tribunal does not believe that it is feasible to glide towards full cost recovery in the absence of wider structural adjustment issues being addressed. The Tribunal, therefore, has adopted the approach of applying a limit or cap on the size of the annual increase in prices. In considering the cap, the Tribunal notes that the bills in the Peel, North Coast and South Coast are substantially above those in other regulated river valleys. This effectively means that users in the Peel, North Coast and South Coast valleys pay substantially more for a megalitre of water than users in other valleys, as illustrated in Table 12.1 below. The effective price was calculated using the revenue derived from entitlement charges and usage charges based on the long term average (LTA) consumption, divided by the LTA consumption. The effective price is used here as a means of showing the relative size of the two-part tariffs across valleys.

The Tribunal also notes that under the draft determination where a cap of 15 per cent (real) was placed on the North Coast, very little progress was made towards cost recovery. The Tribunal has therefore applied a cap of 13 per cent (real) on prices in the Peel, North Coast and South Coast. For the Hunter valley, where prices are closer to those in other valleys, the Tribunal has applied a cap of 15 per cent (real) on the State Water component of charges.

Table 12.1 Effective price in 2005/06 for State Water and DNR's services ($ Real 2006/07)

Valley	State Water ($/ML)	DNR ($/ML)
Border	6.75	3.77
Gwydir	8.51	2.76
Namoi	12.91	4.21
Peel	34.39	7.21
Lachlan	13.55	3.37
Macquarie	9.07	2.26
Murray	4.66	1.45
Murrumbidgee	4.04	1.23
North Coast	84.03	16.13
Hunter	13.88	6.82
South Coast	27.54	5.37

The Tribunal notes that irrigators in the under-recovering valleys have raised concerns that substantial price increases are required to achieve full cost recovery. In the Bega valley, for example, users are concerned that any future Tribunal could continue to target full cost recovery levels which would result in substantially higher future prices. These irrigators

believe that the risk of substantially higher future prices is restricting investments in the industries because farmers may not be able to receive a commercial return on their investment if are exposed to substantially higher prices in the future.

The Tribunal notes irrigators concerns and recognises their desire to have greater certainty as to future prices, particularly given the long term horizon for some investment. However, the Tribunal cannot bind any future Tribunal. Having said this, it believes that any future Tribunal should be guided by the decisions in this determination and should not seek to fully recover all costs from users in the North Coast, South Coast and Peel valleys, assuming that all other factors remain constant. The Tribunal notes that the loss of revenue for State Water is relatively small.

12.2.3 Minimum bills for DNR

In its submission in response to the Draft Report, DNR suggested a minimum bill in line with the one currently applicable on unregulated rivers ($54 per annum). The Tribunal considered DNR's proposal and believes it to be reasonable given the number of small bills. However, the Tribunal had no specific information on costs to inform its decision on the size of the minimum bill. The Tribunal has determined a minimum bill for DNR of $60 per year, to be maintained at that level in nominal terms for the duration of the determination period. It believes that this amount is reasonable, that it reflects the essence of DNR's proposal and that a constant nominal amount is preferable, in the interests of simplicity, given the small amount of revenue involved.

This minimum bill applies to all water access licences (WALS) for all water sources.

12.3 State Water and DNR submission

State Water and DNR each made a submission to this review, which provided detailed information on the agency's costs but did not propose prices.[60] However, State Water's submission indicated the 'unconstrained' price level that would be required for it to recover the full cost of its bulk water services. This submission is largely the same as State Water's submission to the 2005 price review, but includes some revisions to the proposed level of efficient costs to be recovered from users, and several other changes.

State Water notes in its submission that the Government subsidy that it receives to make up the difference between the revenue it receives from users in valleys and its operating costs in providing bulk water services to these users will be phased out over the next five years. Therefore, it proposes that prices achieve full cost recovery over the next five years.

DNR's submission includes a more detailed discussion of its capital and operating costs than its 2005 submission. It also proposes changes to the structure of prices for bulk water services.

60 These submissions were received on 10 October 2005, and are available on the IPART website.

12.4 Pricing decision for regulated rivers

The Tribunal's decision is to set the maximum bulk water charges on regulated rivers shown in Tables 12.2 and 12.3 below and to set rebates for irrigation corporations and districts shown in Tables 12.4 and 12.5 below. Where entitlements have been converted to a unit share under the Water Management Act, a conversion methodology is to be applied.

One of the consequences of the introduction of the Water Management Act is that for some licence holders their entitlement is no longer defined in the licence as a volumetric allowance (in megalitres) but a 'unit share' of the available water for that valley (as defined by the relevant Water Sharing Plan for the valley in question).

For the purposes of setting prices, the Tribunal has assumed that one 'unit share' is equivalent to one megalitre of entitlement. Where this is the case, no conversion factor is required. If a 'unit share' represents less than 1ML of water, then a conversion factor is required to ensure that the price per ML of water is that determined by the Tribunal.

The Tribunal's conversion methodology is described below.

If a Water Sharing Plan converts a licence holder's licence from an entitlement volume to a unit share and a unit share is not equal to 1ML of water, then the entitlement charge is multiplied by the volume of water represented by a unit share. For example, if 1ML of entitlement is converted to 2 unit shares, then the applicable entitlement charge ($ per unit share) in the valley concerned is multiplied by 0.5.[61] This will ensure that users pay the same effective entitlement price per ML of water.

This clause only applies in the initial phase of converting from the volumetric licence to a licence based on unit shares. During the period of a Water Sharing Plan the total volume of water available to licence holders may be reduced for a range of reasons such as climate change. The risk sharing arrangements for these changes are already dealt with under section 87AA of the *Water Management Act 2000*.

In setting prices for regulated rivers, the Tribunal has attempted to move prices towards cost reflective levels. However, it believes in some cases the impact of full cost recovery on customers is unacceptably high. Therefore, it has limited the annualised real increase in average tariffs for general security entitlement holders in the Peel, North Coast and South Coast valleys to 13 per cent to reduce the impact of the price increases on customers.[62]

61 The conversion factor is the amount of water represented by one unit share (eg, 0.5ML) under the water sharing plan divided by the entitlement immediately before that WMA licence was issued (eg, 1ML).

62 The 13 per cent increase is calculated by applying constant entitlement and usage volumes, with usage set at long-term average allocation levels.

Table 12.2 Maximum State Water charges for regulated rivers (Real 2006/07$)

Valley	2005/06 (nominal)	2006/07	2007/08	2008/09	2009/10
High Security Entitlement ($/ML of entitlement or $/unit share)					
Border	4.00	4.09	4.05	4.01	3.96
Gwydir	4.25	4.71	5.00	5.27	5.51
Namoi	8.04	8.35	8.39	8.42	8.43
Peel	11.52	11.51	11.13	10.76	10.41
Lachlan	5.80	6.10	6.20	6.28	6.36
Macquarie	3.66	4.19	4.56	4.91	5.23
Far West	-	-	-	-	-
Murray	4.43	4.01	3.47	2.97	2.49
Murrumbidgee	3.28	3.07	2.78	2.49	2.23
North Coast	10.59	9.34	7.83	6.41	5.07
Hunter	6.61	10.00	12.97	15.74	18.31
South Coast	10.60	10.60	10.26	9.93	9.61
General Security Entitlement ($/ML of entitlement or $/unit share)					
Border	2.68	2.86	2.95	3.03	3.09
Gwydir	2.82	2.95	2.99	3.02	3.05
Namoi	5.36	5.88	6.19	6.48	6.74
Peel	5.05	4.21	3.27	2.38	1.55
Lachlan	3.86	3.61	3.25	2.91	2.59
Macquarie	2.81	2.87	2.84	2.81	2.78
Far West	-	-	-	-	-
Murray	4.02	3.56	3.01	2.49	1.99
Murrumbidgee	3.11	2.71	2.23	1.79	1.37
North Coast	8.14	7.22	6.10	5.05	4.06
Hunter	4.72	5.22	5.54	5.84	6.10
South Coast	8.15	7.67	6.96	6.29	5.65
Usage ($/ML)					
Border	3.11	3.96	4.66	5.31	5.92
Gwydir	3.29	4.70	5.92	7.06	8.11
Namoi	6.42	7.95	9.18	10.32	11.37
Peel	9.19	13.31	16.88	20.20	23.29
Lachlan	4.42	6.02	7.37	8.63	9.81
Macquarie	3.79	4.96	5.93	6.83	7.67
Far West	-	-	-	-	-
Murray	1.09	1.82	2.46	3.06	3.62
Murrumbidgee	0.82	1.50	2.11	2.68	3.21
North Coast	5.42	11.01	16.08	20.80	25.21
Hunter	4.70	6.59	8.21	9.72	11.12
South Coast	5.43	10.30	14.69	18.78	22.60

These charges will be adjusted for the annual movement in the CPI as set out in the determination.

Table 12.3 Maximum DNR charges for regulated rivers (Real 2006/07$)

Valley	2005/06 (nominal)	2006/07	2007/08	2008/09	2009/10
High Security Entitlement ($/ML of entitlement or $/unit share)					
Border	2.23	1.27	1.27	1.27	1.27
Gwydir	1.38	0.71	0.71	0.71	0.71
Namoi	2.62	1.10	1.10	1.10	1.10
Peel	2.41	1.06	1.06	1.06	1.06
Lachlan	1.46	0.88	0.88	0.88	0.88
Macquarie	0.90	0.76	0.80	0.84	0.88
Far West	0.00	-	-	-	-
Murray	1.39	1.29	1.28	1.26	1.25
Murrumbidgee	1.00	0.97	0.96	0.95	0.94
North Coast	2.09	1.88	2.12	2.40	2.71
Hunter	3.30	1.11	1.11	1.11	1.11
South Coast	2.08	1.86	2.11	2.38	2.69
General Security Entitlement ($/ML of entitlement or $/unit share)					
Border	1.50	1.27	1.27	1.27	1.27
Gwydir	0.92	0.71	0.71	0.71	0.71
Namoi	1.75	1.10	1.10	1.10	1.10
Peel	1.06	1.06	1.06	1.06	1.06
Lachlan	0.97	0.88	0.88	0.88	0.88
Macquarie	0.70	0.76	0.80	0.84	0.88
Far West	0.00	-	-	-	-
Murray	1.26	1.29	1.28	1.26	1.25
Murrumbidgee	0.95	0.97	0.96	0.95	0.94
North Coast	1.61	1.88	2.12	2.40	2.71
Hunter	2.36	1.11	1.11	1.11	1.11
South Coast	1.60	1.86	2.11	2.38	2.69
Usage ($/ML of entitlement or $/unit share)					
Border	1.74	1.48	1.48	1.48	1.48
Gwydir	1.08	0.83	0.83	0.83	0.83
Namoi	2.09	1.32	1.32	1.32	1.32
Peel	1.92	1.92	1.92	1.92	1.92
Lachlan	1.12	1.01	1.01	1.01	1.01
Macquarie	0.94	1.02	1.08	1.13	1.19
Far West	0.00	-	-	-	-
Murray	0.34	0.35	0.34	0.34	0.34
Murrumbidgee	0.25	0.25	0.25	0.25	0.24
North Coast	1.08	1.26	1.42	1.61	1.82
Hunter	2.35	1.10	1.10	1.10	1.10
South Coast	1.07	1.25	1.41	1.59	1.80

These charges will be adjusted for the annual movement in the CPI as set out in the determination.

Table 12.4 State Water rebates for irrigation customer districts ($'000, Real 2006/07)

Valley	Total annual rebate
Jemalong	85
Murray Irrigation	1,418
Western Murray	31
West Corurgan	31
Moira	14
Eagle Creek	6
Murrumbidgee Irrigation	901
Coleambally Irrigation	385
Total	**2,872**

These rebates will be adjusted for the annual movement in the CPI as set out in the determination.

Table 12.5 DNR wholesale discounts for irrigation customer districts

Valley	2005/06	2006/07	2007/08	2008/09	2009/10
Murray Irrigation Limited	40%	32%	22%	12%	0%
Western Murray Irrigation Limited	27%	20%	13%	7%	0%
West Corurgan	35%	26%	18%	9%	0%
Moira Irrigation Scheme	30%	23%	15%	8%	0%
Eagle Creek Scheme	25%	19%	13%	6%	0%
Murrumbidgee Irrigation Limited	29%	22%	14%	7%	0%
Coleambally Irrigation Limited	32%	24%	16%	8%	0%
Jemalong Irrigation Limited	27%	20%	14%	7%	0%

These discounts apply to the entitlement charge.

12.5 Pricing decision for Fish River Scheme

The Tribunal's decision is to set the maximum Fish River Scheme shown in Table 12.6 below.

Table 12.6 Maximum total charges for the Fish River Scheme for 2006/07 (Nominal $)

	Prices for 2006/07				
	Delta Electricity	Lithgow Council	Sydney Catchment Authority	Oberon Council	Individual Minor Consumers
Bulk Raw Water					
Minimum Annual Qty (**MAQ**) (ML)	8184	0	3650	750	0.2
Access Rate ($/kL)	0.213	0.213	0.213	0.213	0.266
Use rate charge ≤ MAQ ($/kL)	0.239	0.239	0.239	0.239	0.479
Use rate charge > MAQ ($/kL)	0.452	0.452	0.452	0.452	0.746
Bulk Filtered Water					
Minimum Annual Qty (**MAQ**) (ML)	0	2092	0	0	0.2
Access Rate ($/kL)	0.319	0.319	0.319	0.319	0.372
Use rate charge ≤ MAQ ($/kL)	0.346	0.346	0.346	0.346	0.586
Use rate charge > MAQ ($/kL)	0.666	0.666	0.666	0.666	0.959

Prices for the remainder of the determination period will increase by 4 per cent (nominal) per annum.

State Water has proposed an annual 4 per cent (nominal) increase in Fish River Scheme charges over the 2006 determination period. This is approximately an annual CPI+0.7 per cent increase. State Water believes that its proposed increase will provide funding for works to maintain the assets and to improve the security of supply. In addition, it believes that the price increase will result in the Fish River Scheme moving closer to full cost recovery levels towards the end of the 2006 determination period.

The current approach to price setting effectively involves a negotiated position with the large customers (through the FRWSS Customer Council). The Tribunal did not receive any submissions from these customers that opposed the proposed increase. However, the Sydney Catchment Authority submitted that it expected that any increases in the price of bulk water from the Fish River Scheme would need to be taken into consideration by the Tribunal when assessing performance.

Only about $140,000 of the annual Fish River Scheme revenue is recovered from small customers. These customers account for only 1.5 per cent of the average water usage. The Tribunal also has not received any submissions from these customers. It has compared the proposed Fish River Scheme charges for these customers with a residential customer in Sydney Water and Hunter Water's area of operation. Its analysis shows that Fish River Scheme residential and other minor customers pay significantly less than the same customers in Sydney Water Corporation's and Hunter Water Corporation's areas of operation.

The Tribunal's analysis supports State Water's view that the large users would be meeting the cost of supply by the end of the price path. However, it is not as clear for small users.

Given the level of consultation with large customers through the FRWSS Customer Council and the relatively low prices paid by small customers, the Tribunal's decision is to accept State Water's proposed charges for the Fish River Scheme.

12.6 Pricing decision for unregulated rivers

The Tribunal's decision is to set the maximum bulk water charges on unregulated rivers shown in Tables 12.7 to 12.9 below. Where entitlements have been converted to a unit share under the Water Management Act, a conversion methodology is to be applied. The conversion methodology does not apply in the Far West, where irrigators will convert to volumetric charging only once their new entitlement volumes have been allocated.

The Tribunal's conversion methodology for valleys except the Far West is described below. The aim is to maintain the effective price per ML of water.

If a Water Sharing Plan converts a licence holder's licence from an entitlement volume to a unit share and a unit share is not equal to 1ML of water, then the entitlement charge is multiplied by the volume of water represented by a unit share. For example, if a licence holder initially has 1,000ML of entitlement, which is converted to 1,000 units shares representing 500ML, then each unit share represents 0.5ML of water. The applicable entitlement charge ($ per unit share) in the valley concerned is multiplied by 0.5, which ensure that users pay the same effective entitlement price per ML of water.[63]

This clause only applies in the initial phase of converting from the volumetric licence to a licence based on unit shares. During the period of a Water Sharing Plan the total volume of water available to licence holders may be reduced for a range of reasons such as climate change. The risk sharing arrangements for these changes are already dealt with under section 87AA of the *Water Management Act 2000*.

The conversion methodology does not apply to prices in the Far West, because the Tribunal has determined that irrigators in this valley will move to volumetric charging only once their new entitlement volumes have been issued under the Barwon-Darling Cap Management Strategy. The Tribunal has determined the volumetric charges for this valley after taking into account the new entitlement volumes.

63 For example, if the initial price per ML of entitlement was $2, the price per unit share after the application of the conversion factor is $1 ($2 x 0.5). The user therefore effectively continues to pay $2 per ML of entitlement to water (ie, $1 per 0.5ML).

Table 12.7 Maximum charges for unregulated rivers (Real 2006/07$)

Region/river valley	2005/06 (nominal)	2006/07	2007/08	2008/09	2009/10
Area based charge	**$/ha**	**$/ha**	**$/ha**	**$/ha**	**$/ha**
Border	12.26	10.31	10.31	10.31	10.31
Gwydir	12.26	10.31	10.31	10.31	10.31
Namoi	12.26	10.31	10.31	10.31	10.31
Peel	12.26	10.31	10.31	10.31	10.31
Lachlan	13.57	14.49	14.97	15.48	16.00
Macquarie	13.57	14.49	14.97	15.48	16.00
Far West	13.57	16.12	18.53	21.31	24.51
Murray	7.72	9.17	10.55	12.13	13.95
Murrumbidgee	13.57	11.80	11.80	11.80	11.80
North Coast	13.57	16.12	18.53	21.31	24.51
Hunter	11.75	13.31	14.61	16.02	17.58
South Coast	13.57	14.30	14.60	14.90	15.21
Entitlement charge	**$/ML**	**$/ML**	**$/ML**	**$/ML**	**$/ML**
Border	3.82	2.52	2.52	2.52	2.52
Gwydir	3.82	2.52	2.52	2.52	2.52
Namoi	3.82	2.52	2.52	2.52	2.52
Peel	3.82	2.52	2.52	2.52	2.52
Lachlan	3.07	4.06	4.20	4.34	4.48
Macquarie	4.52	4.06	4.20	4.34	4.48
Far West	2.07	3.44	3.96	4.55	5.23
Murray	3.09	3.05	3.51	4.04	4.64
Murrumbidgee	5.43	5.60	5.60	5.60	5.60
North Coast	4.10	4.09	4.71	5.41	6.22
Hunter	2.65	3.14	3.44	3.78	4.14
South Coast	3.00	3.06	3.12	3.19	3.25

Notes:

1. The entitlement charges in 2005/06 are charges before recalculation using actual area-to-volume (ML/ha) conversion ratios (see section 12.6.1).
2. These charges will be adjusted for the annual movement in the CPI as set out in the determination.

Table 12.8 Entitlement and usage tariff for customers with meters and entitlements (Real 2006/07$)

Region/river valley	2005/06 $/ML (nominal)	2006/07 $/ML	2007/08 $/ML	2008/09 $/ML	2009/10 $/ML
Entitlement					
Border	2.30	1.52	1.52	1.52	1.52
Gwydir	2.30	1.52	1.52	1.52	1.52
Namoi	2.30	1.52	1.52	1.52	1.52
Peel	2.30	1.52	1.52	1.52	1.52
Lachlan	1.85	2.44	2.53	2.61	2.70
Macquarie	2.71	2.44	2.53	2.61	2.70
Far West	1.26	2.09	2.41	2.77	3.18
Murray	1.85	1.83	2.11	2.42	2.79
Murrumbidgee	3.26	3.36	3.36	3.36	3.36
North Coast	2.47	2.47	2.84	3.26	3.75
Hunter	1.60	1.89	2.07	2.27	2.49
South Coast	1.80	1.83	1.87	1.91	1.95
Usage					
Border	1.53	1.00	1.00	1.00	1.00
Gwydir	1.53	1.00	1.00	1.00	1.00
Namoi	1.53	1.00	1.00	1.00	1.00
Peel	1.53	1.00	1.00	1.00	1.00
Lachlan	1.24	1.62	1.67	1.73	1.78
Macquarie	1.80	1.62	1.67	1.73	1.78
Far West	0.84	1.35	1.55	1.78	2.05
Murray	1.24	1.22	1.40	1.61	1.86
Murrumbidgee	2.16	2.24	2.24	2.24	2.24
North Coast	1.65	1.63	1.87	2.15	2.47
Hunter	1.07	1.25	1.37	1.50	1.65
South Coast	1.20	1.23	1.25	1.28	1.30

Notes:

1. The entitlement and usage charges in 2005/06 are based on the entitlement-only irrigation charges before recalculation using actual area-to-volume (ML/ha) conversion ratios (see section 12.6.1).
2. These charges will be adjusted for the annual movement in the CPI as set out in the determination.

12.6.1 Explanation about entitlement charge setting

The Tribunal set entitlement only charges for irrigators in the 2001 determination by applying the average expected licence conversion ratios (ML/ha) provided by the then DLWC. These ratios were used to calculate the entitlement based charges for each valley in such a way that the DLWC would receive the same amount of revenue once the conversion was completed.[64]

Information from DNR's billing data indicates that the average licence conversion ratios differ from the expected ratios on which the tariffs were originally set. Therefore, the Tribunal has recalculated the entitlement based charges by applying the actual licence conversion ratios (see Appendix 5).

The entitlement and usage components of the two-part tariff are set with reference to the relevant valley irrigation entitlement-only charge. Specifically, the entitlement charge is 60 per cent of the entitlement only charge and the usage charge is 40 per cent of the entitlement only charge.[65]

12.6.2 Cost reflective tariffs

In setting prices for unregulated rivers, the Tribunal has attempted to move prices towards cost reflective levels. However, it believes in some cases the impact of the valley increases on customers would be too large. Therefore, it has limited the annual real increase in tariffs in the Far West, Murray and North Coast valleys to 15 per cent to reduce the impact of the price increases on customers.[66]

As discussed in Section 12.2.2, the Draft Report prices resulted in over-recovery in some valleys in some years. Submissions on the Draft Report expressed concerns about this, and the Tribunal decided that prices should be set so that the NPV of costs is equal to the NPV of expected revenue from tariffs over the regulatory period.

Licence holders whose area based licences have been converted to entitlement based licences at ratios (ML per ha) that are higher than the valley average may face large increases in their bills (see Chapter 13). Therefore, the Tribunal has limited any annual bill increase to 20 per cent in real terms (for a constant entitlement volume).

---

64 The bills of irrigators were not expected to be the same, since the conversion of ha to ML for each irrigator would be individually set. Only irrigators that were converted at the valley average would receive the same bill whether billed on entitlement or area.

65 For example, the entitlement only charge in the Lachlan valley in 2006/07 is $4.06 per ML. The entitlement component of the two-part tariff is 2.44 per ML (60 per cent of $4.06 per ML) and the usage component is $1.62 per ML (40 per cent of $4.06 per ML).

66 Area based charges are the recalculated entitlement based charges for 2005/06, shown in Appendix 5, increased by 15 per cent per year in real terms.

12.6.3 Pricing decision for town and industry customers with and without entitlement volumes

The Tribunal's decision is to set the maximum charges to town and industry customers with and without entitlement volumes shown in Tables 12.8 above and 12.9 below.

Town water supply agencies and industrial customers whose usage is metered, but who have not yet been allocated an entitlement volume, will pay an annual charge per licence (currently $119 per year) plus a valley specific usage charge ($/ML). Once these customers have been allocated an entitlement volume, the charge per licence will no longer apply and the valley-specific two-part tariff will apply. The two-part tariff is shown in Table 12.7.

The usage charge that will apply prior to the allocation of an entitlement volume is shown in Tables 12.9.

Table 12.9 Usage tariff for town and industry customers on unregulated rivers with no entitlements (Real 2006/07$)

Region/river valley	2005/06 $/ML (nominal)	2006/07 $/ML	2007/08 $/ML	2008/09 $/ML	2009/10 $/ML
Border	1.72	1.72	1.72	1.72	1.72
Gwydir	1.72	1.72	1.72	1.72	1.72
Namoi	1.72	1.72	1.72	1.72	1.72
Peel	1.72	1.72	1.72	1.72	1.72
Lachlan	1.88	2.00	2.07	2.14	2.21
Macquarie	1.88	2.00	2.07	2.14	2.21
Far West	1.88	2.23	2.56	2.95	3.39
Murray	0.97	1.15	1.32	1.52	1.75
Murrumbidgee	1.88	1.88	1.88	1.88	1.88
North Coast	1.88	2.23	2.56	2.95	3.39
Hunter	1.63	1.85	2.03	2.22	2.44
South Coast	1.88	1.98	2.02	2.06	2.10

These charges will be adjusted for the annual movement in the CPI as set out in the determination.

12.6.4 Explanation about town and industry charge setting

About half of the town and industry users currently have entitlement volumes. These licence holders pay the two-part tariff applicable to irrigators and shown in Table 12.8.

Licence holders who do not yet have entitlement volumes will continue to pay the fixed fee per licence per year and a usage charge. The usage charges increase at the same rate as the two-part tariff in the relevant valley. Once an entitlement volume has been allocated the licence holder moves onto the two-part tariff.

The bills of some town and industry customers will increase substantially upon moving onto the two-part tariff. Therefore, the Tribunal has decided that no bill may increase by more than 20 per cent per year in real terms (for a constant usage volume greater than zero).[67]

12.7 Pricing decision for groundwater services

The Tribunal's decision is to set the maximum charges for groundwater services shown in Table 12.10 below. The existing entitlement volumes are to be used in setting the tariffs. Where entitlements have been converted to a unit share under the Water Management Act, a conversion methodology is to be applied so that so that DNR's revenue remains unchanged.

The Tribunal's conversion methodology is described below.

The conversion ratio to be applied to the entitlement charge in a valley is designed to maintain DNR's revenue after the introduction of Water Sharing Plans. For example, assume that the entitlement volume in a valley is reduced from 100,000ML to 50,000ML, and 50,000 unit shares are issued each worth 1ML. If the price before conversion is $1 per ML, DNR's revenue is $100,000. In order to receive the same amount of revenue from 50,000 unit shares, the price must double to $2 per unit share.

Where licences are converted so that 1 unit share represents 1ML of water, the conversion ratio is the total volume of entitlement in a valley before conversion (for example 100,000ML) divided by the number of unit shares after conversion (for example 50,000 unit shares).

The effect of this conversion methodology on individual licence holders will depend on the individual conversion rates from megalitres of entitlement to unit shares, which the Tribunal understands will differ between licence holders depending on historical usage and the sustainable yield in the relevant zone. Only the bill of a licence holder who has been converted at the valley average will remain unchanged. The potential for large increases in bills is mitigated by Tribunal's maximum allowed annual real increase of 20 per cent (for a constant usage volume).

This clause only applies in the initial phase of converting from the volumetric licence to a licence based on unit shares. During the period of a Water Sharing Plan the total volume of water available to licence holders may be reduced for a range of reasons such as climate change. The risk sharing arrangements for these changes are already dealt with under section 87AA of the *Water Management Act 2000*.

[67] The Tribunal understands that town and industry users have not been billed for usage for the last number of years because usage data has not been collected. The 25 per cent constraint on the increase in bills is to apply to bills which are calculated with realistic usage volumes. The constraint does not apply when the bill is levied only on entitlements.

Table 12.10 Maximum ground water prices (Real 2006/07$)

Valley	2005/06 (nominal)	2006/07	2007/08	2008/09	2009/10
Base charges ($/property)					
Managed areas	187.72	157.07	114.66	63.06	0
Unmanaged areas	81.48	68.18	49.77	27.37	0
Entitlement charge for managed and unmanaged areas ($/ML)					
Border	0.85	1.13	1.45	1.82	2.24
Gwydir	0.85	1.13	1.45	1.82	2.24
Namoi	0.85	1.13	1.45	1.82	2.24
Peel	0.85	1.13	1.45	1.82	2.24
Lachlan	1.37	1.69	2.03	2.39	2.77
Macquarie	1.37	1.69	2.03	2.39	2.77
Far West	1.51	2.02	2.61	3.31	4.12
Murray	1.36	1.62	1.86	2.12	2.38
Murrumbidgee	0.84	0.93	1.00	1.06	1.12
North Coast	1.51	2.02	2.61	3.31	4.12
Hunter	1.51	2.02	2.61	3.31	4.12
South Coast	1.51	2.02	2.61	3.31	4.12
Usage ($/ML)					
Border	0.43	0.57	0.72	0.91	1.12
Gwydir	0.43	0.57	0.72	0.91	1.12
Namoi	0.43	0.57	0.72	0.91	1.12
Peel	0.43	0.57	0.72	0.91	1.12
Lachlan	0.71	0.87	1.05	1.23	1.43
Macquarie	0.71	0.87	1.05	1.23	1.43
Far West	0.75	1.01	1.31	1.66	2.06
Murray	0.69	0.82	0.94	1.07	1.20
Murrumbidgee	0.42	0.46	0.49	0.52	0.55
North Coast	0.75	1.01	1.31	1.66	2.06
Hunter	0.75	1.01	1.31	1.66	2.06
South Coast	0.75	1.01	1.31	1.66	2.06

These charges will be adjusted for the annual movement in the CPI as set out in the determination.

12.7.1 Explanation about groundwater charge setting

DNR expects to reduce entitlement volumes substantially in some valleys when the Major Inland water sharing plans are implemented. These reductions have implications on setting and implementing the tariff structure.

The Tribunal has considered how to take account of the reductions in entitlement volumes when setting tariffs. It believes that the best option is to set tariffs based on the existing entitlement volumes and specify the methodology to calculate the tariffs that will apply once irrigators' entitlements are converted under the water sharing plans.

The Tribunal has specified a methodology that will maintain DNR's revenue, firstly because DNR's water resource management costs do not decrease as a result of the reduction in entitlement volumes, and secondly because the Tribunal understands that usage volumes will not be significantly affected. In principle, a customer will be no worse off paying the same bill for a smaller entitlement volume but the same amount of usage. Thirdly, the Tribunal understands that compensation will be available to customers whose entitlements are reduced.

The Tribunal understands that this (revenue neutral) conversion methodology could lead to very big increases in the bills of some licence holders. DNR does not propose to reduce entitlements by the same proportion for all licence holders in a valley. Reductions will depend on long-term usage and on the sustainable yield in the applicable zone, so that some licence holders may have their entitlements reduced by very little, or not at all. These customers potentially face very large increases in their bills, however this is mitigated by Tribunal's maximum allowed annual real increase of 20 per cent (for a constant usage volume).[68]

12.7.2 Cost reflective tariffs

In setting prices for groundwater, the Tribunal has balanced the requirement to move prices towards cost reflective levels against the impacts on customers. It believes that in most valleys the impact on customers of fully cost reflective tariffs is too large. Therefore, it has limited the annual real increase in average tariffs to 15 per cent for all valleys except the Murray and Murrumbidgee valleys. Tariffs in the Murray and Murrumbidgee valleys achieve full cost reflectivity with average annual real increases of 10 per cent and 2 per cent respectively.

The bills of small volume licence holders will increase by less (or decrease), and those of large licence holder will increase by more, than the average change in tariffs. Only the bills for licence holders with volumes that are the same as the valley average will increase at the same rate as average tariffs.[69]

Large volume customers could face substantial increases in their bills (see Chapter 13). In recognition of this, the Tribunal has decided that no bill may increase by more than 20 per cent per year in real terms (for a constant entitlement volume and, in a managed area, usage volume).

---

68 The 20 per cent per year cap on real increases in bills would however protect those customers during the determination period.

69 The tariffs shown in Table 12.13 provide the same amount of revenue that would be produced by increasing all tariffs at 15 per cent per year (or 10 per cent Murray and 2 per cent in the Murrumbidgee Valleys), assuming constant volumes and number of licences.

12.8 Pricing decision for the Sydney Catchment Authority and Hunter Water Corporation (Hunter Water)

The Tribunal's decision is to set the maximum charges for Sydney Catchment Authority and Hunter Water shown in Table 12.11 below.

Table 12.11 Maximum prices for Hunter Water and Sydney Catchment Authority (Real 2006/07$)

Region/river valley	2005/06 (nominal)	2006/07		2007/08		2008/09		2009/10	
	Usage $/ML	Entitle-ment $/ML	Usage $/ML	Entitle-ment $/ML	Usage $/ML	Entitle-ment $/ML	Usage $/ML	Entitle-ment $/ML	Usage $/ML
Hunter Water Corporation – Unregulated Rivers	2.67	n/a	3.14	n/a	3.44	n/a	3.77	n/a	4.14
Hunter Water Corporation – Groundwater	2.26	n/a	3.03	n/a	3.92	n/a	4.97	n/a	6.18
Sydney Catchment Authority with no entitlement volume	3.00	n/a	3.06	n/a	3.12	n/a	3.19	n/a	3.25
Sydney Catchment Authority with entitlement volume	n/a	1.83	1.23	1.87	1.25	1.91	1.28	1.95	1.30

These charges will be adjusted for the annual movement in the CPI as set out in the determination.

12.8.1 Explanation about charge setting

Currently, the Sydney Catchment Authority and Hunter Water Corporation (Hunter Water) charges are based on their usage volumes.

In relation to surface water, Hunter Water submitted that it does not currently have an entitlement volume for surface water and that charges should continue to be based on extraction volumes.

Hunter Water expects its entitlement allocation for unregulated rivers to be set at the upper bound of extraction, which will not be available or used in most years. In a letter dated 22 February 2006, Hunter Water states that the interim entitlement volumes are four times average annual extractions. Actual extractions will vary greatly from year to year depending on a range of factors including demand and its Hunter Water's off-river storage capacity in Grahamstown dam. This is different from most irrigators that use close to 100 per cent of annual allocations. Therefore, Hunter Water argues that in future its charges should be based on usage rather than entitlement volumes.

Similarly, in relation to groundwater, Hunter Water notes the upper bound nature of its entitlement, which will be required only occasionally to substitute for surface water in times of drought or when it is experiencing are operational problems. Further, it believes that actual extraction will be driven by the "Sustainable Groundwater Extraction Strategy" (which is currently being developed), so that the annual share component represents an upper bound that will need to be accessed only in some years. It therefore regards entitlement volumes as inappropriate measures for annual charging.

The Sydney Catchment Authority has not raised the issue of changing the basis of charging from usage to entitlement volumes. The Tribunal understands that it does not yet have an entitlement volume, but believes its entitlement volume will exceed annual usage by a small margin compared to Hunter Water. It expects the relationship between entitlement and usage volumes for the Sydney Catchment Authority to be similar to the relationship in many other urban water supply authorities in NSW.

Given the nature of Hunter Water's entitlements, the Tribunal's finding is for DNR to continue charging based on extraction volumes for the 2006 determination. The Tribunal notes that it has not identified any other customers that face the same issues as Hunter Water.

For the Sydney Catchment Authority entitlement, the Tribunal's finding is for DNR to continue charging based on usage volumes until its entitlement volume has been determined. Once it has an entitlement volume, DNR is to charge it a two-part tariff with an entitlement charge levied on entitlement volume and usage charge based on extraction.

12.9 Pricing decision related to Yanco Creek System Natural Resource Management Plan (NRMP)

The Tribunal's decision is to set the maximum charges for NRMP at $0.90 per ML of entitlement for irrigators in the Yanco Columbo System.

At the 2005 determination, the Tribunal included a levy on users in the Murrumbidgee valley and the Yanco Columbo System to fund a works program that had been initiated by irrigators in these valleys. This included rehabilitation of the Yanco Columbo System to improve flows and provide significant water efficiencies for the system and the Murrumbidgee Valley, based on the NRMP.

The plan proposed and developed by the Yanco Creek and Tributaries Advisory Council (YACTAC) provides for a ten-year plan at a total cost of $23.4 million. The plan proposed that the costs of the project would be funded as follows:

- $1.3 million by users in the Yanco Columbo System
- $9.3 million by all users in the Murrumbidgee valley
- $12.8 million by CMA and other sources.

In response to irrigators' requests, the 2005 determination included a specific levy on irrigators in the Murrumbidgee valley to recover a portion of the costs related to the NRMP. The charge is $0.90 per megalitre of entitlement for irrigators in the Yanco Columbo System and $0.417 per megalitre of entitlement for all irrigators in the Murrumbidgee River (including the Yanco Columbo System).

Following release of the 2005 determination the Tribunal received representations from Murrumbidgee Irrigation Ltd claiming that they were unaware of the proposal to levy a charge on irrigators in the Murrumbidgee valley in relation to works associated with the NRMP. Other irrigators in the Murrumbidgee valley also advised the Tribunal that the then DIPNR claimed that any water savings resulting from the NRMP would be retained by the environment and would not be available for irrigators.

Following further negotiation amongst irrigator groups in the Murrumbidgee valley, the Tribunal decided that the charge should only be levied on those users in the Yanco Columbo System and not on the whole of the Murrumbidgee valley. While the Tribunal could not amend the 2005 determination to put effect to this new agreement amongst users, it wrote to State Water advising that the charge should not be levied on users in the whole of the Murrumbidgee valley.

For the 2006 determination, the Yanco Creek Advisory Committee has requested that the levy of $0.90 per ML of entitlement be charged over the 2006 determination. State Water supports this proposal. The Tribunal has also received written representations from the Rice Grower's Association and Murrumbidgee Irrigation supporting the $0.90 per ML levy imposed on the Yanco Creek irrigators.

The Tribunal's decision is to continue the levy given that it is a user initiated project to improve water use and environmental outcomes and is supported by the community.

The Tribunal believes that there is likely to be an increase in similar user initiated projects. Therefore, the determination provides for any user-initiated projects that may arise during the determination period by allowing State Water (or DNR) with the ability to negotiate any agreements according to the funding needs of the other parties as well as the preferences of irrigators that put forward the project. Any potential project needs to demonstrate to the Tribunal for approval that there is substantial support for the project and the proposed funding mechanism.

12.10 Transaction fees

The Tribunal's decision is to set the maximum charges for transaction fees shown in Schedule 4 of the Determination for the WAMC.

DNR submitted an increase in costs associated with licence transaction fees from $8.5 million in 2004/05 to $12.2 million in 2006/07 (2004/05$). Fee recovery over the last four financial years has been between $1.2 and $1.7 million, or about 14 per cent to 22 per cent cost recovery. DNR has forecast its total costs to be between $12.2 million and $12.9 million over the 2006 determination period (2004/05$). It has submitted that the increased costs are due to additional resources needed to reduce processing time.

The Tribunal has reviewed the costs associated with the tasks required to process the licences. It has determined that the total costs to be recovered from licence transaction fees are $2.8 million per annum. It has accepted DNR's proposal for a sliding fee scale based on either pump capacity, irrigated area or unit entitlement.

In addition, the Tribunal has accepted DNR's proposed Basic Rights Approval fee of $105.69 in 2006/07. This fee is expected to generate $0.6 million of the total $2.8 million of the transaction licence revenue.

12.11 State Water temporary transfer fees

The Tribunal's decision is to set State Water's temporary transfer fee with a fixed charge of $50 and a variable charge of $0.50/ML with a maximum charge of $150 per transfer. This fee structure will be held constant in nominal terms for the period of the Determination.

This is a licence transaction fee under the *Water Management Act 2000*, which legally falls under DNR. However, State Water administers the charge on behalf of DNR.

When bulk water customers engage in temporary transfers of water entitlements, State Water charges a fee to cover the administration and verification costs of these transfers. The current fee is a fixed charge of $25 and a variable charge of $1.00/ML transferred, with a maximum charge of $75.

State Water submitted that the cost of administering temporary transfers was $350,000 based on 1970 temporary transfers in 2004/05. The revenue recovered from this function was less than $133,000 in 2004/05. In its submission State Water proposed the Tribunal leave the fixed charge at $25, the variable charge at $1.00/ML but increase the maximum charge to $275. State Water said that its proposed fee structure would increase revenue but without discouraging small transfers that were necessary for small irrigators' production efficiency.

The Tribunal's analysis showed that 2004/05 revenue would have been $269,000 based on State Water's proposed fee structure. This was significantly below State Water's submitted costs for this function of $350,000. With the information available at the time the Tribunal's Draft Decision was to implement State Water's proposed fee structure.

Subsequent to the Draft Determination the Tribunal engaged Halcrow to advise on temporary transfer fees. Halcrow recommended that the average cost of efficiently administering temporary transfer fees was in the order of $100 per transfer. The Tribunal notes that an average charge of $100 per transfer equates to total revenue for 2004/05 of approximately $197,000.

While most of the costs may be fixed, the Tribunal believes that there is evidence to support having a different charge for larger transfers. Halcrow has recommended that a maximum fixed fee of $150 would allow for administrative work and some technical assessment of water availability and ability tot deliver or a site visit if appropriate.

The Tribunal considered Halcrow's advice, State Water's comments regarding small transfers and other stakeholder submissions. In attempting to balance the desire for cost reflectivity whilst minimising customer impacts and promoting the efficient allocation of water, the Tribunal has decided to set the fixed charge at $50, the variable charge at $0.50/ML with the maximum charge for any single transfer being no more that $150. The Tribunal has further decided not to index these charges for inflation for the period of this determination.

13 EXPECTED OUTCOMES OF PRICING DECISIONS

In finalising its decisions, the Tribunal considered the impact of its bulk water prices on the agencies, their service quality, their customers, the broader community and the environment. In doing so, it took into account the principles of the NWI, particularly the need for water prices to achieve cost reflectivity, and explicitly considered each of the factors in Section 15 of the IPART Act. It also considered submissions to its Draft Report, including those on the potential impact on farm profitability.

The Tribunal is satisfied that the implications of its decisions for customers, service quality and the environment are appropriately balanced against the financial outcomes for each agency and the government. In relation to the NWI principles, the Tribunal's analysis indicates that its proposed prices will achieve cost reflective prices in most regulated valleys by 2009/10. However, in several valleys, they will not. The Tribunal considers that in these valleys, it is not possible to achieve full cost recovery by the end of the period, as doing so would require price increases that would have an unacceptable impact on customers.

The sections below explain the expected outcomes of the pricing decisions in more detail, including:

- the projected revenue to be recovered from users
- the implications for cost reflectivity
- the implications for customers
- the implications for service quality
- the expected financial and shareholder outcomes for each agency
- the implications for the environment.

13.1 Projected revenue to be recovered from users

The Tribunal has calculated the total revenue that it expects the agencies to recover from users as a result of its prices, assuming average water consumption over the 2006 determination period. For State Water, this total revenue is $44.4 million in 2006/07 rising to $50.8 million in 2009/10, which represents an increase of 14 per cent over the determination period. For DNR, this total revenue is $22.2 million in 2006/07 and $26.7 million in 2009/10, which is an increase of 20 per cent over the period (Table 13.1). The projected revenue in Table 13.1 differs from the notional revenue in Chapter 6 due to the Tribunal's decision to glide path[70] towards the notional revenue requirement.

[70] Under the Tribunal's glide path approach, prices are set so that they move relatively smoothly from their current level to the level that they need to be at by the end of the regulatory period. This ensures price stability, even when the revenue requirement rises and falls in the intervening years.

Table 13.1 Projected revenue from users by agency ($ million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
State Water	**44.4**	**46.8**	**48.9**	**50.8**	**191.0**
DNR	**22.2**	**23.5**	**25.0**	**26.7**	**97.4**
- regulated	9.6	10.0	10.5	11.0	41.1
- unregulated	7.5	7.8	8.2	8.6	32.1
- groundwater	5.0	5.7	6.4	7.1	24.1
Total	**66.6**	**70.3**	**74.0**	**77.5**	**288.4**

Totals may not add due to rounding.

The increase in DNR's projected revenue to be recovered from users over the determination period varies for different services. For ground water, this increase in revenue is as high as 41 per cent, because average prices will increase by 15 per cent a year in most valleys. For regulated rivers, the increase in revenue is only 14 per cent, because the current levels of cost recovery are already fairly high, and the costs of providing these services are not forecast to increase.

It is important to note that the agencies' actual total revenues recovered from users are likely to be slightly lower than the projected revenues set out in Table 13.1 above, for two reasons:

- First, the projected revenues were calculated based on a determination period of four full years. However, for 2006/07, the determination will only apply for nine months of the year.
- Second, the Tribunal was not able to factor into the calculation the impact of its decision to limit real increases in bills to 20 per cent per year for customers who extract water from unregulated rivers and groundwater sources, as it did not have information on the entitlements and usage for every customer.

13.2 Implications for cost reflectivity

Based on the costs and cost allocation methodology applied in this determination, the pricing decisions for regulated rivers are expected to significantly increase the level of cost recovery over the determination period. For State Water, the average level of cost recovery will increase from 80 per cent in 2006/07 to 95 per cent in 2009/10, and seven valleys (and the Fish River Scheme) are expected to fully recover costs by the end of the period. For DNR, the average level of cost recovery will increase from 87 per cent in 2006/07 to 98 per cent in 2009/10, and nine valleys are expected to fully recover costs by the end of the period (see Table 13.2). In addition, four valleys are expected to fully recover costs over the determination period, in NPV terms.

Table 13.2 Tribunal's finding on percentage of total costs recovered by valley for State Water's and DNR's regulated rivers (%)

	State Water		DNR		
Region/river valley	**2006/07**	**2009/10**	**2006/07**	**2009/10**	**NPV 2006/07 – 2009/10**
Border	61%	100%	99%	101%	100%
Gwydir	70%	100%	100%	101%	100%
Namoi	76%	100%	99%	102%	100%
Peel	40%	45%	50%	100%	78%
Lachlan	85%	100%	118%	104%	100%
Macquarie	77%	100%	98%	100%	90%
Far West	-	-	-	-	-
Murray	100%	100%	82%	100%	90%
Murrumbidgee	88%	100%	82%	100%	93%
North Coast	9%	8%	7%	11%	9%
Hunter	52%	88%	97%	100%	99%
South Coast	22%	29%	47%	69%	56%
Fish River Scheme	95%	101%			
Total	**80%**	**95%**	**87%**	**98%**	**91%**

The prices in this determination will not allow either agency to fully recover costs in the North Coast and South Coast valleys, and will not allow State Water to fully recover costs in the Peel Valley. This is because users in these valleys currently pay the highest prices of all users in regulated river valleys (see section 12.4), and the Tribunal has limited the increase in customers' bills[71] to an average of 13 per cent per annum over the determination period. In addition, there are a smaller number of users in these valleys from which to recover costs. Given this, full cost recovery could not be reached without substantial price increases that would have had a significant impact on users. The Tribunal believes that this outcome is consistent with the principles of the NWI.

For the Hunter valley, State Water's cost recovery level will be only 52 per cent in 2006/07, because the agency's costs to be recovered from users are forecast to increase substantially compared to 2005/06. However, these costs are expected to fall over the determination period due to efficiency gains by the agency. Together with the price increases in this determination, these gains will mean that the cost recovery level will reach 88 per cent by 2009/10.

As explained in Section 12.2.2, DNR's prices have been set so that no valley over-recovers over the determination period in NPV terms. Over-recovery may however occur in some years because of the variable nature of WRM expenditure. For example, the Lachlan over-recovers in both 2006/07 and 2009/10, but under-recovers in the intervening years because of an increase in expenditure in those years.

71 For a customer on a general security licence whose consumption is at the long term average.

For the unregulated rivers and ground water sources, DNR's levels of cost recovery are also expected to increase over the determination period (Table 13.3).

Table 13.3 Tribunal's finding on percentage of unregulated and ground water costs recovered by valley (%)

	Unregulated			Ground water	
Region/river valley	**2006/07**	**2009/10**	**NPV 2006/07 – 2009/10**	**2006/07**	**2009/10**
Barwon region (Border, Gwydir, Namoi, Peel)	103%	98%	100%	53%	82%
Central West (Lachlan, Macquarie)	108%	99%	100%	61%	100%
Far West	55%	70%	60%	1%	2%
Murray	57%	71%	63%	71%	100%
Murrumbidgee	129%	111%	100%	87%	100%
North Coast	50%	68%	58%	18%	22%
Hunter	76%	100%	86%	53%	95%
South Coast	98%	100%	98%	15%	18%
Total	**80%**	**88%**	**82%**	**50%**	**75%**

For unregulated rivers, the overall level of cost recovery will increase from 80 per cent in 2006/07 to 88 per cent by 2009/10. DNR will recover 82 per cent of its costs over the full determination period. In most valleys/regions, prices will fully recover costs by 2009/2010. In the Far West, Murray and North Coast valleys, prices will remain below full cost recovery as a result of the Tribunal's decision to allow prices to increase by no more than 15 per cent per year in real terms. In the Barwon region, the Central West and the Murrumbidgee valley, prices will fully recover costs over the determination period.[72]

For ground water sources, the overall level of cost recovery will increase from 50 per cent in 2006/07 to 75 per cent in 2009/10. Prices will only fully recover costs in the Murray and Murrumbidgee valleys, where real price increases of less than 15 per cent per year are required to achieve this outcome.

As noted above, the impact of the Tribunal's decision to limit real increases in individual customers' bills to 20 per cent per year has not been taken into account when calculating expected revenue or levels of cost recovery. Therefore, cost recovery levels, particularly for unregulated rivers and ground water sources, may be somewhat lower than the levels shown in Table 13.3.

[72] Expenditure in the Murrumbidgee valley in 2008/09 ($0.7 million) is almost double the amount in other years ($0.4 million). The prices fully recover costs over the full determination period even though they over-recover in 2006/07 and 2009/10.

The Tribunal's pricing decisions for State Water and DNR required it to balance the objective of achieving full cost recovery with the impact on users. The Tribunal notes that the National Water Commission has recognised the importance of considering the impact on users in its recent review of the NSW compliance with the National Competition Policy:

> The most recent State Water submission to IPART has foreshadowed the removal of New South Wales Government subsidies to State Water to assist with recovery of operating expenditure in those valleys where operating expenditures are not being fully recovered from water users. While achieving full cost recovery is an important tenet of COAG water reforms, provisions are made for community service obligations to those regions where full cost recovery would result in unacceptable community outcomes. It is important for governments to fully explain and justify removal of community service obligations.
>
> The Commission considers it critical that price paths recognise the adjustment that moving to lower or upper bound pricing may mean for rural water users in practice. The Commission notes the central role which IPART plays in making judgements necessary to establish effective price paths.[73]

13.3 Implications for customers

The maximum prices set by the Tribunal represent significant increases in bulk water prices for many bulk water users. However, given that prices need to move towards the full cost recovery level, the Tribunal considers that its price increases represent a fair balance between the interests of customers, the agencies and the broader community.

In reaching its decisions, the Tribunal considered irrigator submissions to its Draft Report and the findings of a study it commissioned the Australian Bureau of Agricultural and Resource Economics (ABARE) to conduct on the potential impact on farm profitability of changes in bulk water prices.[74] The sections below summarised stakeholder submission on the impact of the draft determination, the findings of the ABARE study, then discuss the implications of the Tribunal's proposed maximum prices for customers who use regulated water, unregulated water and ground water.

13.3.1 Stakeholder submissions on customer impacts

Following the release of the draft determination, irrigators have made several responses to the potential impact of the draft determination on farm profitability:

- Bega Cheese notes that while water is a relatively small part of total farm costs, the prices proposed by the Tribunal will result in a substantial reduction in profits. It also notes that farmers in the South Coast will not invest in more efficient irrigation infrastructure because there is a risk that the Tribunal (in 4 years) may seek to increase water prices further to achieve full cost recovery.
- The Coastal Valleys' Customer Service Committee (CVCSC) notes that there are several irrigators in the North Coast already considering handing-in their water licences, as a result of the Tribunal's decision. According to the CVCSC, the price of water has reached a point where dairy farmers are better off purchasing feed for the cows rather than relying on irrigated pastures for feed. The CVCSC also notes that this will result

---

73 National Water Commission, *2005 National Competition Policy Assessment of Progress*, March 2006, p 2.45.

74 ABARE, *Impact of bulk water prices on farm profitability*, April 2006, can be obtained from the Tribunal's website www.ipart.nsw.gov.au

in lost revenue for State Water and a higher Government subsidy to support this valley.

- The Irrigators' Council believes that all sectors of agriculture face a declining Terms of Trade.
- The Hunter Valley Users' note that the dairy cooperative has recently announced a 1.4 cents per litre reduction in the milk price. The ABARE report was based on irrigators' 2004/05 financial accounts and, therefore, has not factored in this lower milk price.
- Representatives from the Namoi and Peel valleys believed that it was not credible because it mistakenly included the cotton farming in the Peel valley.
- Murray Irrigation argues that the impact of 4 years of drought and limited access to water has significantly impacted on farm's reserves and has significantly reduced farmers' ability to absorb further price rises.
- In regards to local government, Tamworth Council has indicated that the proposed price increases would have an impact on its customers.

13.3.2 Findings of ABARE farm survey

ABARE conducted a survey of 228 irrigation farms on regulated rivers in NSW. The survey targeted specific agricultural activities in seven regulated river valleys: the Murray (dairy, mixed livestock/crops), Murrumbidgee (wine grapes, mixed livestock/crops), Lachlan (mixed livestock/crops), Namoi (cotton), Peel (mixed livestock/crops), Bega (dairy), and Hunter (dairy) valleys.

ABARE's report to the Tribunal was based on the survey results for the 2004/05 financial year, as well as its consideration of farm profiles in an 'average' year. The approach used to represent an average year was based on a combination of long-term average yields and prices, published gross margin budgets, long-term average water allocations, and farmers' responses to the survey.

ABARE also undertook scenario analysis to understand the impact of increasing bulk water prices by between 1 per cent and 50 per cent. ABARE concluded that the results of the study show:

> …the impact [of such increases] on farm incomes (*cash receipts less cash costs*) to be relatively small, both in absolute and percentage change terms. While overall impacts are relatively small there are significant differences across river valleys and industries, and among individual farms within a region.[75]

The Tribunal also notes that the survey data shows that bulk water costs as a percentage of total costs were relatively small. Table 13.4 below presents these figures for an 'average farm', based on the 'average' year assumed by ABARE. In 2005/06, bulk water costs represented between 0.8 to 3.4 per cent of total farm costs. If prices increased to the 2009/10 level determined by the Tribunal in this decision (and assuming all other factors remain unchanged), bulk water costs would represent between 0.9 to 4.7 per cent of the total farm costs.

---

75 ABARE, *Impact of bulk water prices on farm profitability*, April 2006, p 22.

Table 13.4 Bulk water costs as percentage of total farm cash costs for an average farm, based on 'average year'

Valley	2005/06 (%)	2009/10 (%)
Murray		
- Crops	2.9	3.9
- Dairy	0.9	1.2
Murrumbidgee		
- Crops	2.0	2.9
- Wine grapes	0.8	0.9
Lachlan – Crops	2.9	4.1
Namoi – Cotton	3.4	4.7
Peel – crops	2.1	3.1
Bega – dairy	1.1	2.1
Hunter – dairy	1.7	2.4

Notes:
1. Assuming water use in an average year.
2. The 2009/10 prices are those determined by the Tribunal in this determination.
3. This analysis is based on the price paid by the river pumper, not the Irrigation Corporations and Districts which will receive a rebate on their bill.

The ABARE study shows that in all valleys, an average farm would achieve cash receipts that more than cover the cash costs, although the 'farm business profit' was negative in a number of valleys.[76] ABARE's results also show that the cotton industry in the Namoi valley can be considered profitable, and that the dairy industry in the Murray and Bega valleys is relatively profitable, where an average farm would achieve a positive 'farm business profit'.

In addition, the survey data shows that some farms pay a substantial amount for temporary water purchases. The Tribunal is aware that bulk water prices are substantially lower than the price paid for water purchased on the open market. For example, in Murray Irrigation's area of operation, water trades on the temporary market for approximately $69/ML (based on the average of the last 7 years).[77] Published trading data on DNR's website also indicates that water sells for a substantially higher amount on the open market than the bulk water price set by the Tribunal. In the regulated system of the Lachlan valley, for example, water traded at consistently above $200/ML in 2004/05 and $50/ML in 2005/06.[78]

The Tribunal believes that the ABARE study demonstrates that bulk water costs are not a major factor in determining the profitability of farms. The profitability of irrigation farms is more significantly influenced by a range of other factors such as global commodity prices, domestic interest rates, fuel prices and climatic conditions (which partly determines the availability of water). While an increase in bulk water costs will have a minor impact on

76 Farm business profit is the farm cash income less non-cash cost items such as cooperator/family labour, depreciation, changes in the value of trading stock.

77 Source: Murray Irrigation's Water Exchange website from the following link, http://www.murrayirrigation.com.au/content.php?p=5&s=watexch

78 This information can be obtained through the following links http://www.wma.dipnr.nsw.gov.au/wma/AllocationSearch.jsp?selectedRegister=Allocation

farm profits, the Tribunal notes that it is not a key factor in determining whether farms remain financially viable businesses in the long term.

13.3.3 Implications for regulated water users

Bills for most customers on regulated rivers will increase over the determination period. However, the implications of the pricing decisions for individual customers will differ depending on whether they receive water classified as high security or general security. For Irrigation Corporations and Districts (ICDs), the implications will differ according to whether or not they have historically received a 'wholesale discount'.

The impact on individual customers' bills will vary considerably between valleys – due partly to differences in changes in the cost of service delivery between valleys, and partly to changes in the structure of prices, which will change price levels (and bills) for some customers. Given that the users' share of the costs of service delivery is predominantly operating costs (see Chapter 7), any changes to the Tribunal's findings on the opening value of the RAB or the WACC will have a minor impact on prices and customers' bills.

To explain the implications of the proposed prices for regulated water users, the Tribunal has focused on two valleys, the Peel and Murray valleys. It has also separately identified the State Water and DNR components of the bulk water charge, and looked at the different impacts for users with high security and general security entitlements, and for ICDs. (Further details of the impacts of different parts of the Tribunal's decisions on bulk water prices for each valley are presented in Appendix 6.)

State Water charges

Table 13.5 below illustrates the impact of the Tribunal's decisions on the State Water component of the bulk water charge. The prices shown are those paid by irrigators in the valleys. They do not represent the final price paid by ICDs, which is lower due to the rebate on the total bill.

Table 13.5 State Water component of the charge, Murray and Peel valleys

Prices	Current price 2005/06		40:60 fixed to usage ratio		Change to costs to be recovered from users		Final price 2009/10	
	Nominal $/ML or $/unit	Real 2006/07 $/ML or $/unit	Revised Price ($)	% change from 2005/06	Revised Price ($)	% change from previous price	Real 2006/07 $/ML or $/unit	% change from previous price
Murray								
HS Entitlement ($/ML or unit)	4.43	4.58	2.41	-47%	2.73	13%	2.49	-9%
GS Entitlement ($/ML or unit)	4.02	4.15	2.19	-47%	2.47	13%	1.99	-19%
Usage ($/ML or unit)	1.09	1.13	2.79	148%	3.16	13%	3.62	15%
Peel								
HS Entitlement ($/ML or unit)	11.52	11.90	6.64	-44%	7.42	12%	10.41	40%
GS Entitlement ($/ML or unit)	5.05	5.22	2.91	-44%	3.25	12%	1.55	-52%
Usage ($/ML or unit)	9.19	9.49	20.83	119%	23.29	12%	23.29	0%

Notes:
1. 2005/06 prices ($ Real 2006/07) are the current prices increased by an inflation rate of 3.3 per cent.
2. The percentage change in this table illustrates the real change from the 2005/06 price to the 2009/10 price.

Three main drivers explain the changes in these prices compared to 2005/06 levels. The first driver is changes to the fixed to variable price ratio to achieve the 40:60 ratio discussed in Chapter 11. In most valleys, a larger proportion of revenue was derived from the fixed component of the charge under the 2005/06 prices. In the Peel valley, approximately 72 per cent of charges are derived from the fixed High Security and General Security entitlement charges, compared to over 81 per cent in the Murray valley.[79]

To meet the required fixed to variable ratio, fixed High Security and General Security entitlement charges need to fall, and the variable usage price will increase to maintain the same level of revenue in the valley. However, given that the Long Run Average Usage in all valleys is lower than the total volume of entitlements, the usage price will need to increase by a proportionally larger amount than the fall in the entitlement price to maintain the same valley revenue.[80] This explains the reason for the relatively large increase in the usage component of the charge.

79 This is based on consumption equivalent to the long term average usage for the valley.

80 The entitlement volumes and long term average usage figures used by the Tribunal in its tariff models are presented in Table 10.1 in this report. In the Murray valley the LRA usage is 1,934,830ML compared to 2,281,390ML entitlement volume. In the Peel valley the LRA usage is 14,675ML compared to 47,761ML entitlement volume.

The relatively larger increase in the usage charge in the Murray (148 per cent) compared to the Peel (119 per cent) is because the current charges in the Murray are heavily weighted toward the fixed component of the charge. As noted above, currently the fixed charge recovers over 81 per cent of the valley revenue.

The second driver is changes in the costs to be recovered from users. These changes are largely due to the Tribunal's findings on each agency's required revenue for operating and capital costs (see Chapters 7 and 8), as well as changes in the cost share ratios (see Chapter 5). In the case of the Peel, North Coast and South Coast valleys, the cost recovery levels have also been increased.

For the Murray, after the changes to prices to reflect State Water's Operating Licence requirements, bulk water charges in this valley need to increase by 13 per cent to recover the higher level of costs. In the Peel valley, bulk water charges need to increase by 12 per cent to recover these costs.

The final driver of the price changes shown in Table 13.5 is the replacement of the 'wholesale discount' for ICDs with a rebate (see Chapter 11) and changes to the High Security premium (Chapter 11). The Peel valley is not affected by the replacement of the wholesale discount because there are no ICD customers in that valley. However, it is affected by the increase in the High Security premium, and the corresponding reduction in the General Security price required to maintain the same valley revenue.

In the Murray valley, the removal of the wholesale discount on the fixed entitlement charges will result in lower entitlement charges for the valley because the ICDs will pay a higher price than when the discount was in place. The increase in the High Security premium will result in a higher High Security entitlement charge but lower General Security entitlement charge. Finally, the introduction of the rebate on the ICDs' total bill will result in a higher price required to be paid by other customers in the valley.

DNR charges

Table 13.6 below illustrates the impact of the changes to the DNR component of the charge on the 2009/10 price in the Murray and Peel valleys.

Table 13.6 DNR component of the charge, Murray and Peel valleys

Prices	Current price 2005/06		HS premium abolished		Change to costs to be recovered from users		Final price 2009/10	
	Nominal $/ML or $/unit	Real 2006/07 $/ML or $/unit	Revised Price ($)	% change from 2005/06	Revised Price ($)	% change from previous price	Real 2006/07 $/ML or $/unit	% change from previous price
Murray								
HS Entitlement ($/ML or unit)	1.39	1.44	1.32	-9%	1.64	24%	1.25	-24%
GS Entitlement ($/ML or unit)	1.26	1.30	1.32	1%	1.64	24%	1.25	-24%
Usage ($/ML or unit)	0.34	0.35	0.35	1%	0.44	24%	0.34	-24%
Peel								
HS Entitlement ($/ML or unit)	2.41	2.48	1.42	-43%	1.07	-24%	1.06	-1%
GS Entitlement ($/ML or unit)	1.06	1.09	1.42	30%	1.07	-24%	1.06	-1%
Usage ($/ML or unit)	1.92	1.99	2.58	30%	1.95	-24%	1.92	-1%

Notes:
1. 2005/06 prices are the current prices increased by an inflation rate of 3.3 per cent.
2. The percentage change in this table illustrates the change from the 2005/06 price to the 2009/10 price.
3. This reflects the prices paid by river pumpers, not the ICDs.

Again, there are three main drivers of the changes in the price compared to current levels. The first driver is the removal of the High Security premium on the entitlement charges (see Chapter 11.5) and the resulting fall in the high security entitlement charge. Because of this change, the General Security entitlement and usage prices have increased to maintain the current relativity with the General Security price. The overall change of this component does not result in any increases in the total revenue to be recovered from users.

The second driver of the price change is the change in the costs to be recovered from users, as presented in detail in Table 6.5. In the Murray, this has resulted in a 24 per cent increase in the entitlement and usage charges, reflecting the relatively large increase in costs resulting from the increase in the MDBC costs. In the Peel valley, DNR costs have fallen resulting in a fall in that valley bulk water charges by 24 per cent.

The final driver of the price change is the removal of the 'wholesale discount' for ICDs. In the Peel valley, there are no ICDs so prices are unaffected by this change.[81] However, for the Murray valley, the ICDs no longer receive a wholesale discount in 2009/10 so are required to pay a higher price. As a result, overall prices in the valley have fallen to maintain the same revenue in the valley.

81 The further 1 per cent reduction in the Peel valley is due to the introduction of a minimum bill.

High security customers – combined State Water and DNR charges

A typical bill for a customer with a High Security entitlement of 1,000ML per year who uses their full entitlement will increase in real terms by between 3 and 85 per cent over the period 2005/06 to 2009/10 (Table 13.7). The maximum increase of 85 per cent translates to an annualised real increase of 17 per cent per annum.

In most valleys, High Security customers will pay a higher bill by the end of the determination period compared to 2005/06. This increase reflects the changes in the level of costs to be recovered from users, changes in the High Security premium as well as the higher usage price resulting from the changes in the fixed to variable price ratio. Given that High Security customers generally use their full entitlement, their bills are influenced significantly by the changes in the usage bill.

Table 13.7 Example bills for High Security customers on regulated rivers for 1,000ML entitlement and 100% allocation ($ Real 2006/07)

	Total bill					
Region/river valley	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total real increase**
Border	11,449	10,805	11,463	12,070	12,629	10%
Gwydir	10,328	10,953	12,463	13,867	15,170	47%
Namoi	19,803	18,723	19,986	21,151	22,224	12%
Peel	25,864	27,800	30,986	33,944	36,683	42%
Lachlan	13,223	14,010	15,462	16,809	18,056	37%
Macquarie	9,600	10,922	12,359	13,707	14,968	56%
Far West	-	-	-	-	-	
Murray	7,490	7,459	7,552	7,632	7,700	3%
Murrumbidgee	5,526	5,797	6,095	6,369	6,620	20%
North Coast	19,813	23,489	27,450	31,217	34,808	76%
Hunter	17,524	18,801	23,387	27,662	31,643	81%
South Coast	19,810	24,008	28,457	32,679	36,695	85%

Note: Entitlements vary significantly in size both within and between valleys. This table calculates the bill for an entitlement volume of 1,000ML for comparability between valleys. High security customers are assumed to use their full entitlement volume.

General Security customers – combined State Water and DNR charges

A typical bill for a customer with a General Security entitlement of 1,000ML per year and an extraction rate of 600ML will change in real terms by between -11 per cent and +63 per cent over the period 2005/06 to 2009/10 (Table 13.8). The maximum increase of 63 per cent translates to an annualised real increase of 13 per cent.[82]

In most valleys, General Security customers will pay a higher bill by the end of the determination period compared to 2005/06. This increase largely reflects the changes in the level of costs to be recovered from users as well as the changes in the fixed to usage price ratio. The exception to this is General Security customers in the Murray and Murrumbidgee valleys.

The percentage increase in bills over the determination period is less for General Security customers compared to High Security customers. This difference reflects the increases in the High Security premium for most valleys. It also reflects the fact that, in calculating the bill shown on Table 13.8, it was assumed that General Security customers use only 60 per cent of their entitlement and so are not as 'exposed' to the higher usage charges. The importance of the usage charge in 'driving' the changes in customers' bills is highlighted further in Table 13.9 below.

Table 13.8 Example bills for General Security customers on regulated rivers for 1,000ML entitlement and 60% allocation ($ Real 2006/07)

	Total bill					
Region/river valley	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total real increase**
Border	7,319	7,399	7,905	8,372	8,804	20%
Gwydir	6,571	6,987	7,754	8,465	9,125	39%
Namoi	12,620	12,542	13,592	14,564	15,462	23%
Peel	13,195	14,411	15,606	16,712	17,734	34%
Lachlan	8,424	8,707	9,163	9,582	9,966	18%
Macquarie	6,555	7,218	7,841	8,427	8,978	37%
Far West	-	-	-	-	-	
Murray	6,339	6,149	5,966	5,789	5,619	-11%
Murrumbidgee	4,857	4,732	4,611	4,493	4,378	-10%
North Coast	14,097	16,463	18,724	20,893	22,982	63%
Hunter	11,683	10,943	12,234	13,433	14,545	24%
South Coast	14,095	16,461	18,722	20,891	22,979	63%

Note: Entitlements vary significantly in size both within and between valleys. This table calculates the bill for an entitlement volume of 1000 ML and a usage volume of 600ML for comparability between valleys

[82] It should be noted if customers use more than 600ML of water the bill increase will be larger than that presented in Table 13.8, due to the relatively large percentage increase in the usage charges.

Table 13.9 shows a typical bill for a customer with a General Security entitlement of 1,000ML per year and an extraction rate of 200ML. In this situation, the customer's bills will change in real terms by between -32 per cent and +18 per cent over the period 2005/06 to 2009/10. In approximately half the valleys, General Security customers will pay a lower bill in 2009/10 compared to 2005/06. This reflects the fact that the entitlement charges have reduced substantially, largely due to the need to meet State Water's Operating Licence requirements regarding the fixed to variable price ratio.

Table 13.9 Example bills for General Security customers on regulated rivers for 1,000ML entitlement and 20% allocation ($ Real 2006/07)

	Total bill					
Region/river valley	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total real increase**
Border	5,315	5,222	5,448	5,655	5,845	10%
Gwydir	4,767	4,774	5,053	5,311	5,548	16%
Namoi	9,104	8,836	9,395	9,912	10,387	14%
Peel	8,604	8,318	8,086	7,863	7,647	-11%
Lachlan	6,136	5,896	5,810	5,724	5,639	-8%
Macquarie	4,600	4,826	5,040	5,242	5,433	18%
Far West	-	-	-	-	-	
Murray	5,749	5,285	4,845	4,429	4,035	-30%
Murrumbidgee	4,417	4,032	3,668	3,323	2,997	-32%
North Coast	11,412	11,554	11,725	11,928	12,170	7%
Hunter	8,770	7,866	8,509	9,105	9,655	10%
South Coast	11,410	11,842	12,284	12,741	13,219	16%

Note: Entitlements vary significantly in size both within and between valleys. This table calculates the bill for an entitlement volume of 1,000ML and a usage volume of 200ML for comparability between valleys.

The Tribunal notes that during its review, most irrigators supported a greater emphasis on usage charges, as required under State Water's Operating Licence. This change will mean that in 2009/10 many General Security customers will pay a higher bill in years of high allocation and a lower bill in years of low allocation, compared to the 2005/06 prices. Therefore, in times when the customers receive water and generate income from the use of the water, they will be required to pay for this. The Tribunal believes that this is a favourable outcome for General Security customers who are faced with an uncertain supply of the resource.

Irrigation Corporations and Districts – combined State Water and DNR charges

Irrigation Corporations and Districts (ICDs) may face different bill increases to other irrigators due to the effect of the changes in the 'wholesale discounts' previously provided. The Tribunal's decision is to remove the 'wholesale discount' currently applying to the fixed entitlement charge and for this to be replaced by a rebate on the total bill to better reflect the costs attributable to the ICDs.

Table 13.10 shows the typical bills for ICDs reflecting their current entitlements and assuming a level of usage based on the long-term average allocations in the valley. The changes to these bills reflect the movements in the bills for the General Security and High Security customers described above. They also reflect the different levels of rebate currently being received by the ICDs. In the Murray valley, for example, Murray Irrigation will receive a higher level of rebate compared to the other ICDs in the valley. However, given that in 2005/06 it received the highest 'wholesale discount' in the valley, the percentage change in the bills from 2005/06 and 2009/10 is similar to other ICDs in the valley. The relatively high percentage increase in the bill for Western Murray Irrigation reflects the fact that it only holds High Security licences and, therefore, will face a higher increase in bills over the period reflecting the changes to the High Security premiums.

The two ICDs located in the Murrumbidgee valley, Murrumbidgee Irrigation and Coleambally Irrigation, will face the greatest increase in bills of the ICDs between 2005/06 and 2009/10. This change reflects the fact that in 2005/06 these two ICDs were not charged for the entitlement volumes associated with their conveyance licences. From 2007/08 onwards, these ICDs will be charged a fixed entitlement charge based on 33 per cent of the entitlement volume for these licences increasing to 67 per cent in 2008/09. By 2009/10 these Corporations will be paying for all the entitlement volumes associated with their conveyance licence.

Table 13.10 Bills for Irrigation Corporations and Districts ($'000, Real 2006/07)

	Total bill					
Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Jemalong	710	769	820	867	911	28%
Murray Irrigation	6,681	7,851	7,966	8,093	8,229	23%
Western Murray Irrn	359	410	421	431	441	23%
West Corurgan	384	476	482	487	491	28%
Moira	197	234	236	238	240	22%
Eagle Ck	93	106	107	108	108	17%
Murrumbidgee Irrn	5,093	5,695	6,286	6,796	7,219	42%
Coleambally Irrn	2,008	2,274	2,540	2,767	2,951	47%

Notes:
1. This table calculates bills for the Irrigation Corporation and Districts and reflects their current entitlements. The ICDs can hold both High Security and General Security licences.
2. The assumed usage is based on the long term average allocations for the valley.
   In 2005/06 Murrumbidgee Irrigation and Coleambally Irrigation did not pay for the entitlement volumes associated with the conveyance licences. Payment for these licences is phased in over the determination period.

13.3.4 Implications for unregulated water users

Bills for most customers on unregulated rivers will increase over the determination period. The implications will differ depending on whether customers are irrigators or other customers. For irrigation customers, the impact will depend on whether the customers will pay area-based charges, volumetric entitlement charges or the two-part tariff.

Irrigation farmers

As discussed in Chapter 12, the Tribunal's 2001 Determination set volumetric entitlement charges by applying the average expected licence conversion ratio (ML/ha) provided by the then Department of Land and Water Conservation (DLWC). For this determination, the Tribunal has recalculated the entitlement based charges by applying the actual licence conversion ratios (see Appendix 5). Therefore, some changes to customers' bills between 2005/06 and 2009/10 will reflect this change.

Table 13.11 provides bills for irrigators with 50 hectare licences whose area-based licences (in 2005/06) have been converted to volumetric licences at the valley average conversion ratio, and who are charged an entitlement only charge. The bill increases reflect the changes in prices to achieve a higher level of cost reflectivity. As noted above, cost recovery levels have increased in most valleys between 2006/07 and 2009/10.

An irrigator whose licence is converted from an area base to a volumetric entitlement at the valley average will face the same bill before and after the conversion.

Table 13.11 Example bills for irrigators on unregulated rivers, 50 ha licences converted at valley average and on an entitlement only charge (Real 2006/07$)

	Total bill					
Region/river valley	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total real increase**
Barwon	633	515	515	515	515	-19%
Central West	701	724	749	774	800	14%
Far West	701	806	927	1,066	1,226	75%
Murray	399	459	527	607	698	75%
Murrumbidgee	701	590	590	590	590	-16%
North Coast	701	806	927	1,066	1,226	75%
Hunter	607	666	730	801	879	45%
South Coast	701	715	730	745	760	9%

Irrigators who choose to go onto the two-part tariff (entitlement and usage charges) will face lower bills. Table 13.12 shows the impact on the bills of irrigators whose licences were converted at the valley average and who elect to go onto the two-part tariff, where usage is 50 per cent of entitlement.

Table 13.12 Example bills for irrigators on unregulated rivers, 50 ha licences converted at valley average and on a two-part tariff (Real 2006/07$)

	Total bill					
Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Barwon	633	413	413	413	413	-35%
Central West	701	580	600	620	641	-9%
Far West	701	806	745	857	986	41%
Murray	399	367	422	485	558	40%
Murrumbidgee	701	472	472	472	472	-33%
North Coast	701	646	743	854	982	40%
Hunter	607	533	585	642	704	16%
South Coast	701	572	584	596	608	-13%

Note: The bill are calculated for usage that is 50 per cent of the entitlment volume.

Those irrigation customers whose licences have been converted at a higher rate than the valley average will face higher bill increases, as indicated in Table 13.13 below. For these customers, their 50 hectare licences will now be issued with entitlements of 500ML which is substantially above the average for the valley. The Tribunal believes it is equitable for those customers who receive a higher entitlement volume to face a higher bill. However, in order to limit the potential impact on these customers, the Tribunal has decided to limit any annual bill increase to 20 per cent in real terms (for a constant entitlement volume) resulting in a maximum bill increase of 107 per cent from 2005/06 to 2009/10.

Table 13.13 Example bills for irrigators on unregulated rivers, 50 ha licences converted at 10ML/ha (high conversion ratio) and on an entitlement only charge (Real 2006/07$)

	Total bill					
Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Barwon	633	760	912	1,094	1,261	99%
Central West	701	841	1,009	1,211	1,453	107%
Far West	701	806	967	1,160	1,453	107%
Murray	399	479	574	689	827	107%
Murrumbidgee	701	841	1,009	1,211	1,453	107%
North Coast	701	841	1,009	1,211	1,453	107%
Hunter	607	728	874	1,048	1,258	107%
South Coast	701	841	1,009	1,211	1,453	107%

Customers can choose to go onto a two-part tariff. Table 13.14 shows the impact on the bills of these customers where usage is 50 per cent of entitlement. Customers in the Barwon and the South Coast will face lower bills by 2009/10 compared to customers on entitlement only charges. Customers in the other valleys will pay the same amount as those on entitlement

only charges because of the Tribunal's decision to limit any annual bill increase to 20 per cent in real terms (for a constant entitlement volume).

Table 13.14 Example bills for irrigators on unregulated rivers, 50 ha licences converted at 10ML/ha (high conversion ratio) and on a two part tariff (Real 2006/07$)

	Total bill					
Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Barwon	633	760	912	1,011	1,011	60%
Central West	701	841	1,009	1,211	1,453	107%
Far West	701	806	967	1,160	1,453	107%
Murray	399	479	574	689	827	107%
Murrumbidgee	701	841	1,009	1,211	1,453	107%
North Coast	701	841	1,009	1,211	1,453	107%
Hunter	607	728	874	1,048	1,258	107%
South Coast	701	841	1,009	1,211	1,301	86%

Those irrigation customers whose licences have been converted at a lower rate than the valley average will face lower bill increases as indicated in Table 13.15 below. These customers will face a substantially lower bill compared to 2005/06.

Table 13.15 Example bills for irrigators on unregulated rivers, 50 ha licences converted at 1.5ML/ha (low conversion ratio) and on entitlement only charge (Real 2006/07$)

	Total bill					
Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Barwon	633	189	189	189	189	-70%
Central West	701	304	315	325	336	-52%
Far West	701	806	297	341	392	-44%
Murray	399	229	263	303	348	-13%
Murrumbidgee	701	420	420	420	420	-40%
North Coast	701	307	353	406	467	-33%
Hunter	607	235	258	283	311	-49%
South Coast	701	229	234	239	244	-65%

Bills will be even lower for customers who choose to go onto the two-part tariff and whose usage is less than 100 per cent of entitlement volume.

Town water supply agencies and industrial customers

Most town water supply agencies and industrial customers will face large increases in their bills from 2005/06 to 2009/10. This reflects the Tribunal's decision to increase prices to achieve a higher level of cost recovery.

Table 13.16 below presents the bills for town and industry customers who have not yet been issued with licences that represent a volumetric entitlement and will face a two-part tariff once they have been allocated with an entitlement volume. In order to limit the potential impact on these customers, the Tribunal has decided to limit any annual bill increase to 20 per cent in real terms (for a constant usage volume) resulting in a maximum bill increase of 107 per cent from 2005/06 to 2009/10.

Table 13.16 Example bills for town and industry on unregulated rivers, converting to the two-part tariff (Real 2006/07$)

	Total bill					
Region/river valley	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total real increase**
Barwon	523	627	682	682	682	30%
Central West	559	671	806	967	1,160	107%
Far West	559	671	806	967	1,160	107%
Murray	348	417	501	601	721	107%
Murrumbidgee	559	671	806	967	1,160	107%
North Coast	559	671	806	967	1,160	107%
Hunter	502	602	723	867	1,041	107%
South Coast	559	671	806	860	878	57%

Note: Entitlement 300ML, usage 225ML.

Currently, about half the town and industry users have been issued with entitlement volumes. These licence holders pay a two-part tariff which is based on the volumetric charge ($/ML) faced by irrigators – the fixed component of the two-part tariff is set at 60 per cent of the irrigators' volumetric charge, with the usage component set at 40 per cent of that volumetric charge.

Table 13.17 below presents the bills for town and industry customers currently on a two-part tariff. The large increase in bills faced by these customers in the Far West, Lachlan, Murray, Hunter and North Coast valleys reflects the Tribunal's decision to achieve a higher level of cost recovery.

It should be noted that the difference in the bills between 2005/06 and 2006/07 also reflects the Tribunal's decision to recalculate the volumetric entitlement based charges for irrigation customers by applying the actual licence conversion ratios (see Appendix 5) which flows through to the two-part tariff for town and industry customers. This will result in an increase in the two-part tariff (and hence bills) in the Lachlan, Far West, Murrumbidgee[83] and Hunter valleys. The decreases in the bills in the other valleys are due to decreases in the (recalculated) two-part tariff.

83 Bills in the Murrumbidgee remain unchanged in real terms because all charges fall in 2006/07 to prevent over-recovery of costs.

Table 13.17 Examples of bills for town and industry on unregulated rivers currently on the two-part tariff (2006/07$)

Region/river valley	Total bill 2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Barwon	1,069	682	682	682	682	-36%
Lachlan	862	1,035	1,134	1,172	1,211	40%
Macquarie	1,257	1,097	1,134	1,172	1,211	-4%
Far West	586	703	844	1,013	1,215	107%
Murray	862	824	948	1,090	1,254	45%
Murrumbidgee	1,512	1,512	1,512	1,512	1,512	0%
North Coast	1,150	1,106	1,272	1,462	1,682	46%
Hunter	743	847	930	1,020	1,119	51%
South Coast	837	826	843	860	878	5%

Note: Entitlement 300ML, usage 225ML.

13.3.5 Implications for ground water users

For ground water users, the Tribunal has decided to phase out base charges, and recover the lost revenue from entitlement and usage charges and a minimum bill. Consequently, the bills of large volume customers will increase while those of small volume customers will decrease. However, the bills of large volume customers will increase by no more than 20 per cent per year in real terms because of the cap placed by the Tribunal on bill increases. The bills of small volume customers will fall to a minimum of $60 per year (nominal).

The introduction of a minimum bill to some extent offsets the impact on DNR's revenue of phasing out the base charges. Consequently, increases in entitlement and usage charges increase by less compared to the draft report.

Tables 13.18, 13.19 and 13.20 show the bills for ground water entitlements of 200ML, 1,000ML and 10ML respectively. Usage in managed areas is assumed to be 50 per cent of entitlement volumes in all cases. The tables show that bills for large entitlements will increase by more than those for smaller entitlements, while the bills for small entitlements (compared to the valley average) will fall as the base charges are phased out. Even though some ground water users will face fairly large price increases in their bills, the dollar value of these increases is small compared to total farm costs.

The extent of the increase in entitlement and usage charges across valleys, and hence bills, depends on the proportion of small volume users in the valley concerned.[84] For example, a large proportion of the licences in the coastal valleys have small entitlements, and more than 40 per cent of revenue from these valleys is currently derived from base charges. As a result, the entitlement and usage charges, and hence the bills for medium and large entitlements, increase by more than in most other valleys.

[84] As explained in chapter 12, charges were set so that *average* tariffs increased by no more than 15 per cent per year in real terms, where the *average tariff* includes the base charge, the entitlement charge and the usage charge.

Table 13.18 Example groundwater bills for 200ML entitlement and usage in managed areas of 50% of entitlement (Real 2006/07$)

Region/river valley	Total bill 2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Managed						
Barwon	415	440	477	518	560	35%
Central West	550	583	624	664	698	27%
Far West	583	661	768	892	1,031	77%
Murray	546	562	581	593	596	9%
Murrumbidgee	411	389	363	327	280	-32%
Unmanaged						
Barwon	261	294	339	391	448	72%
Central West	367	407	455	505	555	51%
Far West	395	471	566	679	820	107%
Murray	365	392	422	451	476	30%
Murrumbidgee	258	254	249	239	224	-13%
North Coast	395	471	566	679	820	107%
Hunter	395	471	566	679	820	107%
South Coast	395	471	566	679	820	107%

In contrast, the reduction in the bill for a 200ML entitlement licence in the Murrumbidgee valley (Table 13.18) is a result of both lower increases in average tariffs in this valley compared to the rest, and the comparatively small amount of revenue currently derived from base charges (less than 15 per cent).

Table 13.19 Example groundwater bills for entitlement volumes of 1,000ML, and usage in managed areas of 50% of entitlement (Real 2006/07$)

	Total bill					
Region/river valley	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total real increase**
Managed						
Barwon	1,297	1,556	1,868	2,241	2,689	107%
Central West	1,976	2,289	2,664	3,066	3,490	77%
Far West	2,139	2,566	3,080	3,696	4,435	107%
Murray	1,953	2,181	2,444	2,712	2,979	53%
Murrumbidgee	1,280	1,318	1,357	1,384	1,398	9%
Unmanaged						
Barwon	967	1,160	1,392	1,670	2,004	107%
Central West	1,501	1,762	2,076	2,414	2,773	85%
Far West	1,640	1,968	2,362	2,834	3,401	107%
Murray	1,489	1,685	1,910	2,143	2,380	60%
Murrumbidgee	955	1,000	1,046	1,087	1,121	17%
North Coast	1,640	1,968	2,362	2,834	3,401	107%
Hunter	1,640	1,968	2,362	2,834	3,401	107%
South Coast	1,640	1,968	2,362	2,834	3,401	107%

Table 13.20 Example groundwater bills for entitlement volumes of 10ML, and usage in managed areas of 50% of entitlement (Real 2006/07$)

	Total bill					
Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Managed						
Barwon	205	171	133	86	54*	-73%
Central West	212	178	140	93	54*	-74%
Far West	213	182	147	104	54*	-74%
Murray	212	177	138	90	54*	-74%
Murrumbidgee	205	169	127	76	54*	-73%
Unmanaged						
Barwon	93	79	64	56*	54*	-41%
Central West	98	85	70	56*	54*	-45%
Far West	100	88	76	61	54*	-45%
Murray	98	84	68	56*	54*	-45%
Murrumbidgee	93	77	60	56*	54*	-41%
North Coast	100	88	76	61	54*	-45%
Hunter	100	88	76	61	54*	-45%
South Coast	100	88	76	61	54*	-45%

* These are the $60 minimum bills expressed in 2005/06 $.

13.4 Implications for service levels

When considering the impact of its pricing decisions on service quality, the Tribunal seeks to ensure that these decisions do not adversely affect the standards of service the agencies provide to their customers. The Tribunal expects that its determination on prices for the 2006 determination period will allow DNR to maintain its service standards and will allow State Water to maintain current service standards and achieve requirements of its Operating Licence. The Tribunal expects that cost reductions and efficiency savings will not be obtained at the expense of service standards.

The Tribunal notes that State Water's service standards will be monitored as part of its Operating Licence, which requires it to achieve some minimum service standards. However, DNR does not have an operating licence, and so is not subject to the same degree of scrutiny.

In addition, as set out in section 4.2.5, State Water and DNR need to publish performance indicators and measures so that stakeholders can monitor delivery against forecast outputs and outcomes. Output performance indicators and measures will help ensure that the agencies are more accountable for their expenditure.

13.5 Expected financial and shareholder outcomes for each agency

Overall, the Tribunal believes that its pricing decisions will not adversely affect the ability of DNR and State Water to operate, maintain, renew and develop the assets required to deliver regulated bulk water services. In addition, the Tribunal believes that State Water's financial position will remain sufficiently strong for it to meet relevant borrowing, capital and dividend requirements.

13.5.1 Impact of notional revenue versus target revenue

Table 13.21 compares the user-share notional revenue requirement, as set out in Chapter 6 of this report, with the projected revenue from users (as set out in Table 13.1 above).

Table 13.21 Difference between user-share notional revenue requirement and projected tariff revenue by agency ($ million, Real 2006/07)

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
Notional revenue requirement					
State Water	55.7	53.5	53.2	53.2	215.6
DNR	30.5	30.8	30.9	30.3	122.5
Projected tariff revenue					
State Water	44.4	46.8	48.9	50.8	191.0
DNR	22.2	23.5	25.0	26.7	97.4
Difference					
State Water	11.2	6.7	4.3	2.4	24.6
DNR	8.3	7.3	5.8	3.6	25.1
Total	**19.5**	**14.0**	**10.1**	**6.0**	**49.7**

Note: Totals may not add due to rounding.

As discussed in Chapter 12, the Tribunal's decisions on prices have taken account of the interests of agencies, customers and stakeholders. In doing so, the balancing of these different interests for the agencies means that the likely target revenue derived from prices is less than the Tribunal's determined notional revenue required by the agencies.

13.5.2 Overall financial strength as assessed by investment category ratings

The Tribunal analysed a range of financial indicators that are commonly used by credit rating agencies to assess an entity's financial capacity and ability to service and repay debt. In doing so, it assumed the payment of dividends based on a payout rate of 70 per cent of profits before tax. The analysis shows that State Water should be able to maintain a sound financial position during the 2006 determination period (Table 13.22). It also indicates that the prices determined will enable State Water to attain a minimum investment grade rating of BBB overall. This financial outcome depends on the Government paying its share of State Water's costs ($90.8 million over the period 2006/07-2009/10) and the difference between the notional revenue requirement and projected tariff revenue in Table 13.22 ($24.6 million over the period 2006/07-2009/10).

Table 13.22 Financial indicators and credit ratings for State Water

	2006/07	2007/08	2008/09	2009/10
Ability to service debt				
1. EBITDA interest cover	4.1	3.8	4.0	3.6
NSW Treasury ratings (2002)	AA+	AA	AA+	AA
2. Funds from operations interest coverage	3.3	3.1	3.2	2.9
Standard and Poors US ratings (1995)	AA	AA	AA	A
3. Pre-tax interest coverage -	3.7	3.4	3.6	3.2
Standard and Poors US ratings (1995)	AA	AA	AA	AA
Ability to repay debt				
4. Funds flow net debt payback	7.1	7.1	8.2	10.0
NSW Treasury ratings (2002)	BBB	BBB	BB+	BB
5. Funds from operations/total debt (%)	0.1	0.1	0.1	0.1
Standard and Poors US ratings (1995)	BBB	BBB	BBB	BB
6. Debt gearing (regulatory value)	0.3	0.3	0.3	0.4
NSW Treasury ratings (2002)	AA+	AA+	AA+	AA+
Standard and Poors US ratings (1995)	AA	AA	AA	AA
Ability to finance investment from internal sources				
7. Internal financing ratio	0.3	0.6	0.2	0.1
NSW Treasury ratings (2002)	B	BBB	B	B
8. Net cash flow/capital expenditure (%)	0.3	0.6	0.2	0.1
Standard and Poors US ratings (1995)	BB	BBB	<BB	<BB
NSW Treasury overall score and rating				
NSW Treasury total score (0 -10)	5.5	6.3	5.3	4.8
Overall rating	BBB+	A	BBB+	BBB
9. Net debt ($m of the day)	92.9	97.1	125.5	169.2

13.5.3 Appropriate payment of dividends by State Water

Based on the financial indicators and credit ratings shown above, the Tribunal estimates that State Water will have funds available to pay a dividend during the 2006 determination period. Alternatively, these monies could be retained in the business and used to help fund the major new investments foreshadowed for the upcoming years.

It should be noted that no specific allowance has been incorporated into prices for the payment of dividends by State Water. State Water's ability to pay a dividend will depend on it achieving the operating and capital expenditure efficiencies set by the Tribunal and also the government paying *both* its share of State Water's costs *and* the difference between the notional revenue requirement and projected revenue shown in Table 13.21.

Section 16 of the IPART Act requires the Tribunal to report on the likely impact to the Consolidated Fund if prices are not increased to the maximum levels permitted. If this is the case, then the level of dividends paid to the Consolidated Fund will fall. The extent of this fall will depend on Treasury's application of its financial distribution policy and how the

change affects after-tax profit. The Tribunal's financial modelling projects dividend payments at 70 per cent of profits before tax. A one dollar decline in before-tax profit would result in a loss of revenue to the consolidated fund of 70 cents.

13.6 Implications for the environment

In making the 2006 determination, the Tribunal considered the implication of its pricing decisions for the environment. It has previously stated its belief that the most effective way to address environmental problems on NSW rivers is for DNR to manage water use within ecologically sustainable river flow regimes. The role of water pricing in this context is to ensure that DNR has adequate funding to cover relevant water resource management costs, and to encourage demand management.

In its assessment of NSW's compliance with the National Competition Policy the National Water Commission has stated:

> For rural systems, New South Wales has reported on the extent to which governments are identifying and recovering environmental costs through their pricing regimes. It is noted that in rural systems, externalities are addressed through resource management costs incurred by the Department of Natural Resources, excluding those related to policy development and ministerial and parliamentary services and passed on to water users through bulk water prices.
>
> Based on the above information, the Commission considers that New South Wales has met its COAG commitment with regard to reporting that the recovery of costs by rural water businesses includes the recovery of environmental externality costs.[85]

The Tribunal's determination allows a notional revenue requirement of $31.9 million in 2006/07 and a total of $127.6 million for DNR's Water Resource Management activities. The determination also allows for environmental compliance costs in relation to State Water. These include the costs associated with the installation of fish ladders, and facilities to mitigate thermal pollution and enable environmental flows that mimic natural river flow cycles. The Tribunal considers that these costs should be shared by extractive users and the Government (on behalf of the broader community).

The Tribunal's price determinations can also affect the environment through the structure of the prices it sets, particularly through the use of variable usage charges to send a signal to customers about the need to conserve water. For this determination, the Tribunal has decided to restructure prices on the State Water component of the charge to achieve the fixed to variable price ratios required under State Water's Operating Licence. This will provide an incentive for users to conserve water, as they will pay a higher price for a megalitre of water extracted.

While the Tribunal supports price structures that encourage water conservation, it continues to have some doubts about how effective they are in doing so. As noted earlier in this chapter, bulk water only makes up a relatively small proportion of customers' bills, and this limits their responsiveness to price changes. For this reason, the Tribunal believes that prices can only play a supplementary role in encouraging water conservation, and that decisions or planning instruments such as the limits on the level of water extraction in each valley are likely to be needed to have a major impact on demand.

---

85 National Water Commission, *2005 National Competition Policy Assessment of Progress*, March 2006, p 2.56.

GLOSSARY OF TERMS

Term	*Meaning/Definition*
2005 determination period	The regulatory period from 1 July 2005 to 30 June 2006
2005 review	The Tribunal's review for the 2005 determination period
2006 determination period	The regulatory period ending 30 June 2010
ARIMA	Autoregressive integrated moving average
CIE	Centre for International Economics
CMA	Catchment Management Authorities
COAG	Council of Australian Governments
DBBRC	Dumaresq-Barwon Border River Commission
Determination	The price limits set by the Tribunal
DIPNR	Department of Planning, Infrastructure and Natural Resources
DNR	Department of Natural Resources
Fish River Scheme	Fish River Water Supply Scheme
Halcrow/MMA	Halcrow Pacific Pty Ltd and McLennan Magasanik Associates Pty Ltd
Hunter Water	Hunter Water Corporation
IPART Act	Independent Pricing and Regulatory Tribunal Act 1992
IQQM	Integrated Quantity and Quality Model
LRA	Long run average
MDBC	Murray Darling Basin Commission
NRC	Natural Resources Commission
NWC	National Water Commission
NWI	National Water Initiative
RAB	Regulatory Asset Base
Regulatory period	The period over which price limits are determined
State Water	State Water Corporation
SWC Act	State Water Corporation Act 2004
Sydney Catchment	The Sydney Catchment Authority
Tribunal	Independent Pricing and Regulatory Tribunal of NSW
WACC	Weighted Average Cost of Capital
WAL	Water Access Licence
WAMC	Water Administration Ministerial Corporation
WMA	Water Management Act 2000
WRM	Water resource management

APPENDIX 1 MATTERS TO BE CONSIDERED BY THE TRIBUNAL UNDER SECTION 15 OF IPART ACT

The Tribunal's decisions have been made in accordance with the requirements set out in the IPART Act, including the factors contained in Section 15 of the Act. This section, which is reproduced in full in Box A1, specifies the matters the Tribunal must consider when making a determination. The Tribunal is satisfied that its determination achieves a reasonable balance between these matters.

Box A1 Matters to be considered by Tribunal under Section 15 of the IPART Act

(1) In making determinations and recommendations under this Act, the Tribunal is 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).

(2) In any report of a determination or recommendation made by the Tribunal under this Act, the Tribunal must indicate what regard it has had to the matters set out in subsection (1) in reaching that determination or recommendation.

Table A1.1 indicates where the matters have been considered throughout the report by the Tribunal in making this determination.

Table A1.1 Consideration of Section 15 matters by Tribunal for State Water and DNR determinations

Section 15(1)	Report reference
(a) cost of providing the service	Chapters 6, 7 and 8
(b) protection of consumers from abuse of monopoly power	Chapters 5 and 13
(c) appropriate rate of return and dividends	Chapter 9
(d) effect on general price inflation	Not applicable
(e) improved efficiency in supply of services	Chapters 7 and 8
(f) ecologically sustainable development	Chapter 13
(g) impact on borrowing, capital and dividend requirements	Chapters 9 and 13
(h) additional pricing policies	Chapters 11 and 12
(i) need to promote competition	Not applicable
(j) considerations of demand management	Chapters 11, 12 and 13
(k) the social impact on customers	Chapter 13
(l) standards of quality, reliability and safety of the services	Chapter 13

APPENDIX 2 COUNCIL OF AUSTRALIAN GOVERNMENTS' WATER REFORM FRAMEWORK

In undertaking its price determinations the Tribunal gives consideration to policies adopted at a national level and agreed to by relevant states and territories. The first intergovernmental water reform framework was endorsed by COAG in 1994. The Commonwealth Government has recently released a further policy document, the National Water Initiative (NWI) that refreshes the 1994 COAG agreement and provides guidance for, amongst other things, water pricing reform throughout Australia. A key theme in both these documents is to set water prices to achieve full cost recovery.

As part of the intergovernmental agreements, the National Water Commission reviews each state and territory's progress in implementing these reforms. Progress is rewarded by tranche payments by the Commonwealth Government under the National Competition Policy.

The Tribunal recognises the importance of these commitments, particularly to ensure longer-term environmental sustainability and economic efficiency. However, in setting bulk water prices it seeks to balance the need to implement these broader Government commitments with other important considerations, including the ability of bulk water users to absorb the price rises required to achieve full cost recovery, and its own obligations under the IPART Act.

A2.1 National Water Initiative

The NWI was entered into by the Commonwealth government and most state and territory governments. The NWI was formally adopted at the COAG meeting of 25 June 2004.

The NWI attempts to provide guidance on policies to improve the management of Australia's water resources. The stated purpose of the NWI is:

> …in recognition of the continuing national imperative to increase the productivity and efficiency of Australia's water use, the need to service rural and urban communities, and to ensure the health of river and groundwater systems by establishing clear pathways to return all systems to environmentally sustainable levels of extraction.

A key objective of the NWI is:

> …to provide greater certainty for investment and the environment, and underpin the capacity of Australia's water management regimes to deal with change responsively and fairly.

While the document deals with all aspects of managing the water resource, the issues of relevance to the Tribunal's review relates mainly to the pricing principles being proposed. The principles essentially build on those developed in the 1994 COAG Agreement. The principles of relevance to this review include:

- establish pricing policies for water storage and delivery in rural and urban systems that facilitate efficient water use and trade in water entitlements (clause 65)
- continue to use consumption based pricing (end 2008) (clause 65i)

- achieve full cost recovery of water services including recovery of environmental externalities where feasible and practical (clause 65ii)
- apply consistent pricing policies across sectors and jurisdictions where entitlements are to be traded (clause 65iii)
- apply lower and upper bound levels of cost recovery, as recommended by ARMCANZ in 1998, including a move towards upper bound pricing by 2008 for metropolitan water agencies (clause 66i) and recognition that the upper bound level may not always be possible for rural and regional water (clause 66v)
- achieve full cost recovery for all rural surface and groundwater based systems, recognising that there will be some small community services that will never be economically viable but are necessary for social and public health reasons (clause 66v)
- establish consistent approaches to pricing and attributing costs of water planning and management by 2006 (clause 67)
- examine the feasibility of using market based mechanisms such as pricing to account for positive and negative environmental externalities associated with water use (clause 73ii)
- implement pricing that includes externalities where found to be feasible (clause 73iii)
- use independent bodies to set or review prices for water storage or delivery by government water service providers (clause 77i) and publicly review and report on pricing by government and private water service providers (clause 77ii).

APPENDIX 3 WEIGHTED AVERAGE COST OF CAPITAL

The Tribunal calculated the Weighted Average Cost of Capital (WACC) for State Water as a pre-tax real WACC. Its methodology was to first calculate the cost of equity using the Capital Asset Pricing Model (CAPM):

$$R_e = Rf + \beta e \times (Rm - Rf)$$

where:

Rf = the *nominal* risk free rate

Rm = the *nominal* weighted expected return of the whole market. This leads to the calculation of the market risk premium over the risk-free rate as Rm - Rf

Beta (βe) = a measure of the risk of the asset relative to the market index

It then fed the cost of equity into the pre-tax real WACC formula:

$$WACCpretax \quad real = \frac{\left(1 + \left\{ \frac{R_e}{\left[1 - t \times (1 - \gamma)\right]} \times \left(\frac{E}{D + E}\right) + R_d \times \frac{D}{D + E} \right\}\right)}{(1 + i)} - 1$$

where:

Re = the nominal cost of equity

Rd = the nominal cost of debt

t = the statutory tax rate

Gamma (γ) = the value attributed to imputation tax credits

E = the amount of equity in the capital structure

D = the amount of debt in the capital structure. E/(D + E) is the proportion of equity funding. D/(D + E) is the proportion of debt funding

i = inflation rate

The Tribunal's considerations and findings in relation to the individual parameters used to calculate the WACC are set out below. The Tribunal notes that it undertook an extensive review of these parameters as part of its final decision in the 2005 Metropolitan Water Review. Therefore, it has adopted the parameters it used in the 2005 Metropolitan Water Review, and has adjusted them to reflect data that has become available since that review.

A3.2 Nominal and real risk free rates and inflation

The Tribunal's finding is to base the WACC calculation on a nominal risk free rate of 5.8 per cent and a real risk free rate of 2.4 per cent. The implied inflation is 3.3 per cent.

The Tribunal used the nominal and real risk free rates (calculated as the 20-day averages of the ten-year Commonwealth Government Bonds and Treasury indexed bonds[86] with similar maturity) to derive inflation for the WACC calculation (using the Fisher equation[87]). The 20-day averages for the nominal and real risk free rate and implied inflation as at 22 August 2006 are shown in Table A3.1 below.

Table A3.1 Interest rates and implied inflation

	Draft finding (%)*	Finding (%)
Nominal risk free rate	5.7%	5.8%
Real risk free rate	2.6%	2.4%
Implied inflation	3.1%	3.3%

* Draft finding calculated as the 20-day average of the ten year Commonwealth Government Bond indicator rate as prepared by Lewis Securities Ltd and published daily in the Australian Financial Review and the 20-day average of yields of the 2016 Treasury indexed bond, 17 May 2006, and finding as at 22 August 2006.

A3.3 Market risk premium

The Tribunal's finding is to calculate WACC using a market risk premium in the range of 5.5 to 6.5 per cent.

The market risk premium (MRP) represents the additional return over the risk free rate of return that an investor requires for the risk of investing in a diversified equity portfolio.

The Tribunal's finding is to use an MRP in the range of 5.5 to 6.5 per cent. It decided to use a range for the value of the MRP due to the large variability in observed MRP, for example, as estimated by the Centre for Research in Finance at the Australian Graduate School of Management (AGSM).[88] The range of 5.5 to 6.5 per cent is similar to the range adopted by the Tribunal in other recent regulatory decisions.

In arriving at this finding, the Tribunal had regard to the MRP values adopted by other Australian regulators, and to its own recent regulatory decisions. Importantly, it also considered evidence from long-term historical MRP studies. Table A3.2 provides a summary of the MRP studies it considered. The MRP estimates in this table depend considerably on the underlying methodology used and the time periods chosen for study. Of these studies, the lowest estimate is 5.8 per cent and the highest is 7.9 per cent, resulting in a mid-point of 6.9 per cent. However, the most recent study conducted by the AGSM

86 The nominal risk free rate is readily observable through Commonwealth Government Bonds, Semi-Government Bonds and Corporate Bonds. However, given the depth and liquidity of the Commonwealth Government Bond market, it is the most appropriate instrument to determine the nominal risk free rate.

87 The Fisher equation is $(1 + r_{nominal}) = (1 + r_{real}) \times (1 + i)$

88 Centre for Research in Finance, AGSM, (2004), *Risk Premium Estimates for Investors in Fully Paid Australian Listed Equity – January 1974 to December 2003*, Report prepared for IPART.

indicates that the Australian market risk premium as measured by an arithmetic average including October 1987 is 5.8 per cent.

Table A3.2 Market Risk Premium Studies

Source	Methodology	Period	MRP
AGSM	Arithmetic average, incl. Oct 1987	1974-2003	5.8%
	Arithmetic average, excl. Oct 1987	1974-2003	7.1%
Officer	Arithmetic mean[89]	1882-1987	7.9%
	Arithmetic mean[90]	1882-2001	7.2%
	Arithmetic mean[91]	1946-1991	6.0-6.5%
Hathaway[92]	Arithmetic mean	1882-1991	7.7%
	Arithmetic mean	1947-1991	6.6%
Dimson, Marsh & Staunton[93]	Arithmetic mean	1900-2000	7.6%
Gray[94]	Arithmetic mean	1883-2000	7.3%

The Tribunal adopted the same market risk premium range of 5.5 to 6.5 per cent in the 2005 Metropolitan Water Determination. It is not aware of new information that warrants a change in the MRP value used in that determination and in its Draft Report.

89 Officer, R. "Rates of return to shares, bond yields and inflation rates: An historical perspective", in *Share Markets and Portfolio Theory; Readings and Australian Evidence*, 2ed, University of Queensland Press, 1992.

90 Provided by Professor Officer to the Essential Services Commission (*Review of Gas Access Arrangements, Final Decision*, October 2001). Original information published in Officer, R. "Rates of return to shares, bond yields and inflation rates: An historical perspective", in *Share Markets and Portfolio Theory; Readings and Australian Evidence*, 2ed, University of Queensland Press, 1992.

91 Officer, R. "Rates of return to shares, bond yields and inflation rates: An historical perspective", in *Share Markets and Portfolio Theory; Readings and Australian Evidence*, 2ed, University of Queensland Press, 1992.

92 Hathaway, N. *unpublished manuscript.* "Australian Equity Risk Premium" in *Valuation and the Cost of Capital Under an Imputation Tax System*, Cost of Capital Seminar, Melbourne Business School, University of Melbourne, August 1996.

93 Cited in: E. Dimson, P. Marsh and M. Staunton, *Triumph of the Optimist: 101 years of Global Investment Returns*, Princeton University Press, 2002.

94 Gray, S. "Issues in Cost of Capital Estimation", UQ Business Schools, University of Queensland, 19 October 2001.

A3.4 Debt margin (including debt raising costs)

The Tribunal's finding is that the appropriate level of debt margin is in the range of 1.1 to 1.3 per cent, including an allowance of 0.125 per cent for debt raising costs.

The debt margin represents the cost of debt a company has to pay above the nominal risk free rate. The debt margin is related to current market interest rates on corporate bonds, the maturity of debt, the assumed capital structure and the credit rating. The Tribunal determined the debt margin by estimating a range using:

- a 20 day average of the yields on the fair yield curve for BBB+ to BBB rated corporate debt with a 10-year maturity; and
- a 20 day average of the yields of a basket of Australian corporate bonds.[95]

Allowances for debt raising costs suggested in previous consultancy reports by ABNAmro and Westpac ranged from 12.5 to 25 basis points.

The range for the 20 day averages of a combination of actual yields and the fair yield curve including an allowance for debt raising costs is shown in Table A3.3.

Table A3.3 Debt margins (including debt raising costs)

BBB+ Spectrum (10yrs)	BBB Spectrum (10yrs)	Coles Myer Finance Limited (25-Jul-12)	General Property Trust (22-Aug-13)	Investa Property Group (23-Aug-12)	Santos (23-Sep-15)
1.1%	1.2%	1.2%	1.3%	1.2%	1.2%

The resulting overall debt margin for the decision is 1.1 to 1.3 per cent.

A3.5 Gearing level

The Tribunal's finding is that the appropriate level of gearing is 60 per cent.

When determining the level of gearing used to calculate WACC, the Tribunal adopts a benchmark capital structure, rather than the actual financing structure, to ensure that customers will not bear the cost associated with an inefficient financing structure.

The Tribunal notes that the Government established State Water's capital structure on 1 July 2004 with a gearing ratio of 20 per cent. This level of gearing took into account, among other key parameters, State Water's significant capital expenditure forecasts which were expected to be debt financed.

Table A3.4 shows the recent Australian regulatory determinations on gearing levels for electricity, water and gas businesses.

[95] All yields are estimated using CBASpectrum. The corporate bonds used by the Tribunal are those that in the Australian market most closely match the Tribunal's target credit rating and maturity. CBASpectrum is a database service from the Commonwealth Bank of Australia. The database estimates fair yield curves for Australian corporate debt.

Table A3.4 Regulatory determinations – gearing levels

Regulator	Industry	Gearing
Victorian Essential Service Commission (2005)	Water	60%
WA Economic Regulation Authority (2005)	Water	40-60%
Queensland Competition Authority (2004)	Water	50%
Government Prices Oversight Commission, Tasmania (2004)	Water	50%
Independent Competition and Regulation Commission (2004)	Water	60%
Independent Competition and Regulation Commission (2004)	Electricity	60%
Australian Competition and Consumer Commission (2005)	Electricity	60%
Queensland Competition Authority (2001)	Electricity	60%
Economic Regulation Authority (2005)	Gas	60%

The Tribunal adopted a 60 per cent gearing level in the 2005 Metropolitan Water Determination. It is not aware of any new information that warrants a change in the gearing level used in that determination and in its Draft Report.

A3.6 Dividend imputation factor (gamma)

The Tribunal's finding is to use a gamma range of 0.50 to 0.30.

Under the Australian dividend imputation system, investors receive a tax credit (franking credit) for the company tax they have paid. This ensures the investor is not taxed twice on their investment returns (ie, once at the company level and once on the personal tax level).

The value of imputation tax credits is represented in the Capital Asset Pricing Model (CAPM) by 'gamma'. The rationale behind this, including the value of gamma in the CAPM, is that if investors are receiving a tax credit from their investment, they would accept an investment with a lower return than if there were no tax credits attached to this investment. The gamma is an important input in the CAPM, as a high value (for example one) would reduce the cost of capital considerably.

The Tribunal's finding is to use a gamma range of 0.50 to 0.30, as it did in the 2005 Metropolitan Water Determination. The debate in Australia about what value to assign to gamma has centred on the assumptions that capital markets are either fully globally integrated or fully segregated within local markets. The use of a domestic CAPM, with a domestic MRP and betas, should imply that capital markets are fully segregated and that the marginal investor is domestic.

In making its 2005 Metropolitan Water Determination, the Tribunal had regard to a number of studies in which gamma was estimated.[96] These studies indicate that the value of gamma is anywhere between zero and one. The Tribunal's view is that assuming the marginal

[96] See for example, Cannavan, Finn & Gray, 2004, *The value of dividend imputation tax credits in Australia,* Journal of Financial Economics 73,1, pp 167-197; Bellamy, D and S. Gray, 2004. *Using Stock Price Changes to Estimate the Value of Dividend Franking Credits*. Working Paper University of Queensland, Business School; Chu, H., Partington G. *The market value of dividends: evidence from a new method*, working paper, UTS, 2001.

investor in Australian equities is domestic, under the *New Business Tax System (Miscellaneous) Act (No. 1) 2000* imputation tax credits should have a value greater than zero.

The Tribunal is not aware of new information that warrants a change in the value of gamma used in 2005 Metropolitan Water Determination and in its Draft Report. Therefore, it has decided to maintain the approach it used in that determination and adopt a value for gamma in the range of 0.50 to 0.30. It believes that this range reflects both the uncertainty surrounding the value investors attach to imputation tax credits, as well as the different franking credit distribution rates of companies.

A3.7 Tax rate

The Tribunal's finding is to use the statutory tax rate of 30 per cent.

This finding is consistent with the Tribunal's findings on the appropriate tax rate for calculating the WACC in other industries, and in the 2005 Metropolitan Water Determination and its Draft Report.

A3.8 Equity beta

The Tribunal's finding is to use an equity beta range of 0.80 to 1.0.

The equity beta is a measure of the extent to which the return of a security varies in line with the return of the market (known as systematic risk). As the market moves, each individual asset is more or less affected. To the extent that any asset participates in such general market moves, that asset entails systematic risk. The equity beta does not take into account business specific or unsystematic risks.

A business with an equity beta greater than the market average of one would be expected to have a higher rate of return compared with the market average, as it represents a higher level of systemic risk than the market average. Equally, a business with an equity beta of less than one would be expected to have a lower rate of return than the market, as it represents a lower level of systemic risk.

Estimating betas empirically requires information on the economic returns to a particular entity. This information is available only for entities that are listed on the stock exchange. In the absence of such information, the Tribunal has to exercise its discretion. It does so by considering other information available at the time of the decision, such as relative risk analysis with comparable traded companies, relative risk analysis with other regulated industries and overseas evidence.

Table A3.5 shows its decisions on equity beta for the water, energy and transport industries from 1999 to 2005.

Table A3.5 Tribunal findings on equity beta

Tribunal decision	Equity beta
Water	
2005 Metropolitan Water Determination	0.80 - 1.0
2003 Metropolitan Water Determination	0.65 - 0.90
2000 Metropolitan Water Determination	0.65 - 1.02
Energy	
2005 Country Energy Gas Access Arrangement Final Decision	0.8 - 1.0
2005 AGLGN Gas Access Arrangement Final Decision	0.8 - 1.0
2004 Electricity Network Price Review Final Decision	0.78 - 1.11
2000 AGLGN Gas Access Arrangement Final Decision	0.9 - 1.1
1999 Electricity Network Price Review Final Decision	0.78 - 1.14
Transport	
2005 NSW Rail Access Undertaking	0.7 - 1.0
1999 NSW Rail Access Undertaking	0.7 - 1.0

The majority of the regulatory precedents in the water sector are for urban water supply businesses, or for bulk water supply businesses that provide water predominantly to urban or industrial customers. Few jurisdictions have explicitly considered an appropriate range for equity betas for rural water businesses. Prices have generally satisfied only the lower bound revenue requirement,[97] and as such have not incorporated a return on capital. This has meant that the estimation of the WACC parameters has generally not been necessary.

Table A3.6 shows recent regulatory decisions on equity beta for water businesses. It shows that there has been a wide range of decisions on equity beta.

[97] In 1994 the Council of Australian Governments (COAG) adopted the *Strategic Framework for Water Reform*, determining the limit between which water prices should fall. These upper and lower limits were known as upper and lower bound pricing. Lower bound pricing includes operations, maintenance, administration, refurbishment, tax or tax equivalents, interest on debt and externalities and is known as minimum financial viability pricing. Upper bound pricing goes further to include a commercial rate of return on the regulatory asset base.

Table A3.6 Regulatory decisions on equity beta – water

Decision	Adjusted equity beta
ERA 2005 Metropolitan Water Final Decision	0.80
IPART 2005 Metropolitan Water Final Decision	0.80 - 1.0
ESC 2005 Metropolitan and Regional Final Decision	0.75
ICRC 2004 Metropolitan Water Final Decision	0.90
QCA 2004 Gladstone Final Decision	0.81
GPOC 2004 Bulk Water Final Decision	0.62 - 1.19
IPART 2003 Metropolitan Water Final Decision	0.65 - 0.90
QCA 2003 Burdekin Final Decision	0.50
IPART 2001 Bulk Water Final Decision	0.65 - 1.02

Note: Adjusted using a gearing of 60 per cent.

In making its draft finding the Tribunal estimated an equity beta for State Water by reviewing the systematic risks that it faces relative to the metropolitan water businesses. The Tribunal concluded that it had no conclusive evidence that State Water's systematic risk profile warrants a different equity beta than that used for the metropolitan water business.[98]

In its response to the draft finding State Water argues that the Tribunal had not appropriately recognised State Water's non-diversifiable risk in the equity beta and as such the rate of return set out in the draft decision is below the market level.[99] There are two arguments put forward here. First, State Water argues that it faces higher levels of demand risk and revenue risk than metropolitan water businesses. Second, State Water argues that this demand and revenue risk is non-diversifiable and should be reflected in the equity beta.

The Tribunal has considered State Water's arguments. The Tribunal acknowledges that although Sydney Water and State Water have a similar pricing structure (fixed vs. variable revenue), State Water is likely to face higher levels of demand fluctuation and therefore revenue volatility. State Water's demand can be volatile as demand for irrigation water is a derived demand dependent on international factors, such as international commodity markets and exchange rates and climatic patterns. Further, irrigation water is a supplementary source of water and as such, rainfall variability causes volatility in demand for irrigation water.

The Tribunal has considered this in selecting the point rate of return from within the range. However, the Tribunal's analysis shows that there is little correlation between State Water's returns and general market movements.

On balance, the Tribunal believes that there is no conclusive evidence that State Water's systematic risk profile warrants a different equity beta to that used for the metropolitan water businesses. As it is only systematic or economy-wide risk that is reflected in the equity beta, the Tribunal's finding is to adopt an equity beta in the range of 0.8 to 1.0, as it did in the 2005 Metropolitan Water Determination and in its Draft Report. The Tribunal believes that any uncertainty has been reflected in the use of a range rather than a point estimate.

98 IPART, *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 August 2006 to 30 June 2010, Draft Determinations and Draft Report*, May 2006, p 72.

99 State Water Corporation, SWC Response to Draft Determination, May 2006, p 14.

APPENDIX 4 VALLEY DATA

State Water

Table A4.1 Tribunal's findings on the State Water's user-share operating expenditure allocated by valley ($million, 2006/07) (excluding MDBC and DBBRC costs)

Region/river valley	Financial Year				
	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Border	1.4	1.3	1.3	1.2	5.2
Gwydir	3.3	3.1	3.1	3.0	12.6
Namoi	3.7	3.5	3.4	3.4	14.0
Peel	1.1	1.0	1.0	1.0	4.2
Lachlan	4.2	3.9	3.8	3.8	15.7
Macquarie	3.8	3.6	3.5	3.5	14.4
Far West					
Murray	2.6	2.5	2.5	2.5	10.0
Murrumbidgee	6.2	5.8	5.6	5.6	23.1
North Coast	0.7	0.6	0.6	0.6	2.4
Hunter	3.5	3.3	3.2	3.2	13.2
South Coast	0.7	0.6	0.6	0.6	2.6
Fish River Scheme	3.4	3.2	3.1	3.0	12.6
Total	34.6	32.4	31.8	31.3	130.1

Note: Totals may not add due to rounding.

Table A4.2 Tribunal's findings on the State Water's user-share MDBC operating expenditure allocated by valley ($million, 2006/07)

Region/river valley	Financial Year				
	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Border	0.0	0.0	0.0	0.0	0.1
Gwydir	0.1	0.1	0.1	0.1	0.3
Namoi	0.1	0.1	0.1	0.1	0.3
Peel	0.0	0.0	0.0	0.0	0.0
Lachlan	0.0	0.0	0.0	0.0	0.0
Macquarie	0.0	0.0	0.0	0.0	0.2
Far West					
Murray	6.9	6.8	6.7	6.6	27.1
Murrumbidgee	1.5	1.5	1.5	1.5	6.0
North Coast	0.0	0.0	0.0	0.0	0.0
Hunter	0.0	0.0	0.0	0.0	0.0
South Coast	0.0	0.0	0.0	0.0	0.0
Fish River Scheme	0.0	0.0	0.0	0.0	0.0
Total	8.7	8.6	8.4	8.3	34.0

Note: Totals may not add due to rounding.

Table A4.3 Tribunal's findings on the State Water's user-share DBBRC operating expenditure allocated by valley ($million, 2006/07)

Region/river valley	Financial Year				
	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Border	1.0	0.6	0.6	0.6	2.9
Gwydir	0.0	0.0	0.0	0.0	0.0
Namoi	0.0	0.0	0.0	0.0	0.0
Peel	0.0	0.0	0.0	0.0	0.0
Lachlan	0.0	0.0	0.0	0.0	0.0
Macquarie	0.0	0.0	0.0	0.0	0.0
Far West					
Murray	0.0	0.0	0.0	0.0	0.0
Murrumbidgee	0.0	0.0	0.0	0.0	0.0
North Coast	0.0	0.0	0.0	0.0	0.0
Hunter	0.0	0.0	0.0	0.0	0.0
South Coast	0.0	0.0	0.0	0.0	0.0
Fish River Scheme	0.0	0.0	0.0	0.0	0.0
Total	1.0	0.6	0.6	0.6	2.9

Note: Totals may not add due to rounding.

Table A4.4 Tribunal's findings on the State Water's user-share capital expenditure allocated by valley ($million, 2006/07)

Region/river valley	Financial Year				
	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Border	0.1	0.0	0.0	0.0	0.2
Gwydir	1.4	0.2	0.2	0.1	1.9
Namoi	0.6	0.4	2.5	1.1	4.5
Peel	0.3	0.1	0.6	0.2	1.2
Lachlan	1.3	1.1	0.6	1.0	4.0
Macquarie	1.3	0.6	0.6	3.1	5.6
Far West					
Murray	2.7	0.7	1.4	0.6	5.4
Murrumbidgee	1.4	1.2	1.5	0.9	4.9
North Coast	0.3	0.2	0.0	0.0	0.5
Hunter	0.6	0.4	0.2	0.4	1.6
South Coast	0.1	0.0	0.2	0.0	0.3
Fish River Scheme	1.8	0.7	0.5	0.5	3.5
Total	11.9	5.7	8.2	7.8	33.7

Note: Totals may not add due to rounding.

Table A4.5 Tribunal's findings on the State Water's user-share depreciation allocated by valley ($million, 2006/07)

Region/river valley	Financial Year				
	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Border	0.1	0.1	0.1	0.1	0.3
Gwydir	0.1	0.1	0.1	0.1	0.5
Namoi	0.1	0.1	0.1	0.2	0.5
Peel	0.0	0.0	0.0	0.0	0.1
Lachlan	0.1	0.2	0.2	0.2	0.6
Macquarie	0.2	0.2	0.2	0.2	0.7
Far West					
Murray	0.1	0.2	0.2	0.2	0.6
Murrumbidgee	0.2	0.3	0.3	0.3	1.1
North Coast	0.0	0.0	0.0	0.0	0.1
Hunter	0.1	0.1	0.1	0.1	0.4
South Coast	0.0	0.0	0.0	0.0	0.1
Fish River Scheme	0.3	0.3	0.3	0.3	1.3
Total	1.4	1.5	1.6	1.7	6.4

Note: Totals may not add due to rounding.

Table A4.6 Tribunal's findings on the State Water's user-share return on assets allocated by valley ($million, 2006/07)

Region/river valley	Financial Year				
	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Border	0.1	0.1	0.1	0.1	0.4
Gwydir	0.9	0.9	0.9	0.9	3.7
Namoi	0.7	0.7	0.8	0.9	3.0
Peel	0.2	0.2	0.2	0.2	0.8
Lachlan	0.8	0.9	0.9	1.0	3.7
Macquarie	1.0	1.1	1.1	1.2	4.5
Far West					
Murray	0.7	0.8	0.8	0.9	3.2
Murrumbidgee	1.4	1.5	1.6	1.6	6.1
North Coast	0.2	0.2	0.2	0.2	0.8
Hunter	0.7	0.7	0.8	0.8	3.0
South Coast	0.1	0.1	0.1	0.1	0.4
Fish River Scheme	3.1	3.2	3.2	3.2	12.8
Total	9.9	10.4	10.8	11.2	42.2

Note: Totals may not add due to rounding.

Table A4.7 Tribunal's findings on the State Water's user-share revenue requirement allocated by valley ($million, 2006/07)

Region/river valley	Financial Year				
	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Border	2.6	2.1	2.1	2.1	8.9
Gwydir	4.4	4.2	4.2	4.2	17.0
Namoi	4.6	4.3	4.4	4.5	17.8
Peel	1.3	1.2	1.2	1.3	5.1
Lachlan	5.2	5.0	4.9	4.9	20.0
Macquarie	5.1	4.9	4.8	4.9	19.8
Far West					
Murray	10.3	10.2	10.2	10.2	40.9
Murrumbidgee	9.4	9.0	9.0	9.0	36.3
North Coast	0.9	0.8	0.8	0.8	3.3
Hunter	4.4	4.1	4.1	4.0	16.6
South Coast	0.8	0.8	0.8	0.8	3.1
Fish River Scheme	6.8	6.7	6.6	6.6	26.8
Total	55.7	53.5	53.2	53.2	215.6

Note: Totals may not add due to rounding.

DNR

Table A4.8 Tribunal's findings on the DNR's user-share operating expenditure and depreciation allocated by valley ($million, 2006/07) (excluding MDBC and DBBRC costs)

	Financial Year				
Region/river valley	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total**
Regulated activities					
Border	0.4	0.4	0.4	0.4	1.7
Gwydir	0.6	0.6	0.6	0.5	2.2
Namoi	0.6	0.5	0.5	0.5	2.2
Peel	0.2	0.1	0.1	0.1	0.4
Lachlan	0.7	0.9	1.0	0.8	3.4
Macquarie	0.8	1.1	1.0	1.0	3.9
Far West	-	-	-	-	-
Murray	2.9	2.9	2.9	2.8	11.5
Murrumbidgee	2.5	2.4	2.3	2.6	9.7
North Coast	0.3	0.2	0.3	0.2	1.0
Hunter	0.4	0.4	0.4	0.4	1.5
South Coast	0.1	0.1	0.1	0.1	0.3
Total	**9.4**	**9.6**	**9.5**	**9.4**	**37.9**
Unregulated activities					
Border	0.2	0.2	0.2	0.2	0.7
Gwydir	0.2	0.2	0.2	0.2	0.6
Namoi	0.2	0.2	0.2	0.2	0.7
Peel	0.0	0.0	0.0	0.0	0.2
Lachlan	0.4	0.5	0.5	0.5	2.0
Macquarie	0.4	0.5	0.5	0.5	1.9
Far West	1.3	1.3	1.3	1.3	5.1
Murray	0.3	0.3	0.3	0.3	1.3
Murrumbidgee	0.4	0.4	0.8	0.4	1.9
North Coast	2.0	2.0	2.1	2.1	8.1
Hunter	1.1	1.0	1.0	1.0	4.1
South Coast	2.9	3.0	3.0	3.0	11.8
Total	**9.3**	**9.5**	**10.1**	**9.7**	**38.5**
Groundwater					
Border	0.4	0.3	0.3	0.3	1.4
Gwydir	0.6	0.6	0.6	0.6	2.6
Namoi	0.8	0.9	0.9	0.9	3.5
Peel	0.2	0.2	0.2	0.2	1.0
Central West	1.2	1.2	1.0	1.0	4.4
Far West	0.8	0.6	0.5	0.5	2.4
Far West	0.8	0.6	0.5	0.5	2.4
Murray	1.1	1.0	1.0	1.0	4.2
Murrumbidgee	0.9	0.9	0.9	0.9	3.6
North Coast	0.9	0.9	1.0	1.0	3.8
Hunter	0.8	0.7	0.7	0.7	3.0
South Coast	0.8	0.8	0.8	0.8	3.2
Total	**10.0**	**9.9**	**9.5**	**9.4**	**38.8**

Notes:
1. Totals may not add due to rounding.
2. The Barwon region includes Border, Gwydir, Namoi and Peel valleys.
3. The Cental West region includes Lachlan and Macquarie valleys.

Table A4.9 Tribunal's findings on the DNR's user-share MDBC operating expenditure allocated by valley ($million, 2006/07)

Region/river valley	Financial Year				
	2006/07	2007/08	2008/09	2009/10	Total
Regulated activities					
Border	0.05	0.05	0.05	0.05	0.21
Gwydir	0.08	0.08	0.08	0.08	0.31
Namoi	0.06	0.06	0.06	0.06	0.24
Peel	0.00	0.00	0.00	0.00	0.01
Lachlan	0.08	0.08	0.08	0.08	0.31
Macquarie	0.10	0.10	0.10	0.10	0.39
Far West	-	-	-	-	-
Murray	0.68	0.68	0.68	0.68	2.71
Murrumbidgee	0.51	0.51	0.51	0.51	2.04
North Coast	-	-	-	-	-
Hunter	-	-	-	-	-
South Coast	-	-	-	-	-
Total	**1.55**	**1.55**	**1.55**	**1.55**	**6.21**

Note: Totals may not add due to rounding.

Table A4.10 Tribunal's findings on the DNR's user-share DBBRC operating expenditure allocated by valley ($million, 2006/07)

Region/river valley	Financial Year				
	2006/07	2007/08	2008/09	2009/10	Total
Regulated activities					
Border	0.16	0.16	0.16	0.16	0.64
Unregulated activities					
Far West	0.10	0.10	0.10	0.10	0.40
Groundwater					
Border	0.01	0.01	0.01	0.01	0.06
Total	**0.27**	**0.27**	**0.27**	**0.27**	**1.10**

Notes:
1. Totals may not add due to rounding.
2. No DBBRC costs have been allocated to valleys or water sources not shown in this table.

Table A4.11 Tribunal's findings on the DNR's user-share revenue by valley ($million, 2006/07)

	Financial Year				
Region/river valley	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total**
Regulated activities					
Border	0.7	0.7	0.7	0.7	2.6
Gwydir	0.6	0.6	0.6	0.6	2.5
Namoi	0.6	0.6	0.6	0.6	2.4
Peel	0.1	0.1	0.1	0.1	0.3
Lachlan	0.9	0.9	0.9	0.9	3.7
Macquarie	0.9	1.0	1.0	1.1	3.9
Far West	-	-	-	-	-
Murray	2.9	3.1	3.3	3.5	12.9
Murrumbidgee	2.5	2.7	2.9	3.1	11.2
North Coast	0.0	0.0	0.0	0.0	0.1
Hunter	0.4	0.4	0.4	0.4	1.5
South Coast	0.0	0.0	0.0	0.1	0.2
Total	**9.7**	**10.1**	**10.5**	**11.0**	**41.3**
Unregulated activities					
Barwon	0.6	0.6	0.5	0.5	2.2
Central West	0.9	1.0	1.0	1.0	3.8
Far West	0.8	0.8	0.9	1.0	3.4
Murray	0.2	0.2	0.2	0.2	0.8
Murrumbidgee	0.5	0.5	0.5	0.5	1.9
North Coast	1.0	1.1	1.3	1.4	4.8
Hunter	0.8	0.9	0.9	1.0	3.6
South Coast	2.8	2.9	2.9	3.0	11.6
Total	**7.5**	**7.8**	**8.2**	**8.6**	**32.1**
Groundwater					
Barwon	1.1	1.3	1.5	1.7	5.6
Central West	1.7	1.9	2.2	2.4	8.2
Far West	0.0	0.0	0.0	0.0	0.0
Murray	0.8	0.8	0.9	1.0	3.6
Murrumbidgee	0.8	0.8	0.9	0.9	3.3
North Coast	0.2	0.2	0.2	0.2	0.7
Hunter	0.4	0.5	0.6	0.7	2.2
South Coast	0.1	0.1	0.1	0.1	0.5
Total	**5.0**	**5.7**	**6.4**	**7.1**	**24.1**

Note: Totals may not add due to rounding.

Table A4.12 Tribunal's findings on DNR's forecast expenditure for unregulated rivers and ground water by valley compared to the draft determination ($ million, Real 2006/07)

Valley	Draft decision			Final decision		
	Tribunal draft finding (excluding MDBC and DBBRC)	MDBC and DBBRC cost pass through	Tribunal draft finding	Tribunal draft finding (excluding MDBC and DBBRC)	MDBC and DBBRC cost pass through	Tribunal finding
Unregulated						
Border	0.7	-	0.7	0.7	-	0.7
Gwydir	0.6	0.0	0.7	0.6	-	0.6
Namoi	0.7	0.0	0.7	0.7	-	0.7
Peel	0.2	-	0.2	0.2	-	0.2
Lachlan	2.0	0.0	2.0	2.0	-	2.0
Macquarie	1.9	0.0	2.0	1.9	-	1.9
Far West	5.2	0.5	5.7	5.1	0.4	5.5
Murray	1.3	0.0	1.4	1.3	-	1.3
Murrumbidgee	2.0	0.1	2.1	1.9	-	1.9
North Coast	8.3	-	8.3	8.1	-	8.1
Hunter	4.2	-	4.2	4.1	-	4.1
South Coast	12.1	-	12.1	11.8	-	11.8
User total	**39.3**	**0.8**	**40.1**	**38.5**	**0.4**	**38.9**
Government share	**20.8**	**0.2**	**21.1**	**20.4**	**0.2**	**20.6**
Total	**60.2**	**1.0**	**61.2**	**58.8**	**0.6**	**59.4**
Ground water						
Border	1.4	0.1	1.5	1.4	0.1	1.4
Gwydir	2.6	-	2.6	2.6	-	2.6
Namoi	3.6	-	3.6	3.5	-	3.5
Peel	1.0	-	1.0	1.0	-	1.0
Lachlan	4.5	-	4.5	4.4	-	4.4
Macquarie	6.0	-	6.0	5.9	-	5.9
Far West	2.5	-	2.5	2.4	-	2.4
Murray	4.3	-	4.3	4.2	-	4.2
Murrumbidgee	3.6	-	3.6	3.6	-	3.6
North Coast	3.9	-	3.9	3.8	-	3.8
Hunter	3.0	-	3.0	3.0	-	3.0
South Coast	3.3	-	3.3	3.2	-	3.2
User total	**39.7**	**0.1**	**39.8**	**38.8**	**0.1**	**38.9**
Government share	**6.7**	**-0.0**	**6.7**	**6.6**	**-**	**6.6**
Total	**46.5**	**0.1**	**46.5**	**45.4**	**0.1**	**45.5**

Notes:
1. Totals may not add due to rounding.
2. Deprecation costs are included.

APPENDIX 5 CALCULATION OF ENTITLMENT-BASED CHARGES ON UNREGULATED RIVERS

Table A5.1 shows the original conversion ratios (column 1), the actual licence conversion ratios calculated from DNR's billing data (column 2), the actual 2005/06 entitlement charges (column 4) and the 2005/06 entitlement charges recalculated on the basis of the actual licence conversion ratios (column 5)[100].

The Tribunal has used the recalculated 2005/06 entitlement-based tariffs as the basis for charges from 2006/07.

The Barwon region (Border, Gwydir, Namoi and Peel) was treated as a single area in 2001 when the entitlement charge was set, and this continues to apply. The Lachlan and Macquarie valleys, together know as the Central West, were given different licence conversion ratios and (hence) entitlement charges in 2001. However, as shown in Table A5.1, using the actual licence conversion ratios for each valley would result in much larger changes to the current charges than would the application of the combined licence conversion ratio. Given that they currently pay the same area-based charge, and that there may be some uncertainly regarding the allocation of entitlement volumes across the two valleys, the Tribunal has set a common tariff for the two valleys, based on the combined licence conversion ratio (3.6ML/ha).

100 The entitlement charges are calculated as follows: ($/ha tariff) divided by (ML/ha conversion ratio) = $/ML tariff.

Table A5.1 Recalculation of 2005/06 entitlement charges using actual valley licence conversion ratios (ha to ML)

	DLWC expected conversion ratios	Actual conversion ratios[1]	Current 2005/06 tariffs	Current 2005/06 tariffs	2005/06 tariffs recalculated using actual conversion ratios	% difference between actual and recalculated tariffs ($/ML)
	ML/ha	ML/ha	$/ha	$/ML	$/ML	%
	1	2	3	4 (col 3/col 1)	5 col (col 3/col 2)	6
Border	3.2	4.1	12.3	3.8	3.0	-21%
Gwydir	3.2	4.1	12.3	3.8	3.0	-21%
Namoi	3.2	4.1	12.3	3.8	3.0	-21%
Peel	3.2	4.1	12.3	3.8	3.0	-21%
Lachlan[2]	3.2 (4.4)	3.6 (1.9)	13.6	3.1[3]	3.8 (7.1)	24% (133%)
Macquarie[2]	3.2 (3.0)	3.6 (4.7)	13.6	4.5[3]	3.8 (2.9)	-16%(-36%)
Far West[4]	6.5	4.7	13.6	2.1	2.9	40%
Murray	2.5	3.0	7.7	3.1	2.6	-17%
Murrumbidgee	2.5	2.1	13.6	5.4	6.4	19%
North Coast	3.3	3.9	13.6	4.1	3.4	-16%
Hunter	4.4	4.2	11.7	2.7	2.8	5%
South Coast	4.5	4.7	13.6	3.0	2.9	-3%
Total	3.9	3.9				

Notes:

1. These ratios are calculated from billing data obtained from DNR.
2. The Lachlan and Macquarie Valleys form the Central West. The same area-based charges currently apply ($13.6/ha). The conversion ratios and recalculated tariffs show in brackets are for the individual valleys.
3 Note that the DLWC's individual conversion ratios for the Lachlan and Macquarie valleys (column 1) were used to calculate the current 2005/06 tariffs.
4. Entitlement volumes in the Far West are in the process of being reduced. The ratios and tariffs shown here are calculated using the expected entitlement volumes after reductions.

APPENDIX 6 IMPACT OF TRIBUNAL DECISIONS ON STATE WATER AND DNR CHARGES FOR REGULATED RIVERS

DNR

Prices	Current price 2005/06		HS premium abolished		Change to costs to be recovered from users		Final price 2009/10	
	Nominal $/ML or $/unit	Real 2006/07 $/ML or $/unit	Revised Price ($)	% change from 2005/06	Revised Price ($)	% change from previous price	Real 2006/07 $/ML or $/unit	% change from previous price
Border								
HS Entitlement charge	2.23	2.31	1.55	-33%	1.27	-18%	1.27	0%
GS Entitlement charge	1.50	1.54	1.55	0%	1.27	-18%	1.27	0%
Usage charge	1.74	1.80	1.80	0%	1.48	-18%	1.48	0%
Gwydir								
HS Entitlement charge	1.38	1.43	0.96	-33%	0.71	-26%	0.71	0%
GS Entitlement charge	0.92	0.95	0.96	1%	0.71	-26%	0.71	0%
Usage charge	1.08	1.11	1.12	1%	0.83	-26%	0.83	0%
Namoi								
HS Entitlement charge	2.62	2.71	1.82	-33%	1.11	-39%	1.10	0%
GS Entitlement charge	1.75	1.81	1.82	1%	1.11	-39%	1.10	0%
Usage charge	2.09	2.16	2.17	1%	1.32	-39%	1.32	0%
Peel								
HS Entitlement charge	2.41	2.48	1.42	-43%	1.07	-24%	1.06	-1%
GS Entitlement charge	1.06	1.09	1.42	30%	1.07	-24%	1.06	-1%
Usage charge	1.92	1.99	2.58	30%	1.95	-24%	1.92	-1%
Lachlan								
HS Entitlement charge	1.46	1.51	1.03	-32%	0.90	-13%	0.88	-2%
GS Entitlement charge	0.97	1.00	1.03	3%	0.90	-13%	0.88	-2%
Usage charge	1.12	1.15	1.19	3%	1.03	-13%	1.01	-2%
Macquarie								
HS Entitlement charge	0.90	0.93	0.73	-22%	0.88	22%	0.88	-0.3%
GS Entitlement charge	0.70	0.72	0.73	1%	0.88	22%	0.88	-0.3%
Usage charge	0.94	0.97	0.98	1%	1.20	22%	1.19	-0.3%

Prices	Current price 2005/06		HS premium abolished		Change to costs to be recovered from users		Final price 2009/10	
	Nominal $/ML or $/unit	Real 2006/07 $/ML or $/unit	Revised Price ($)	% change from 2005/06	Revised Price ($)	% change from previous price	Real 2006/07 $/ML or $/unit	% change from previous price
Murray								
HS Entitlement charge	1.39	1.44	1.32	-9%	1.64	24%	1.25	-24%
GS Entitlement charge	1.26	1.30	1.32	1%	1.64	24%	1.25	-24%
Usage charge	0.34	0.35	0.35	1%	0.44	24%	0.34	-24%
Murrumbidgee								
HS Entitlement charge	1.00	1.04	0.99	-5%	1.16	17%	0.94	-19%
GS Entitlement charge	0.95	0.98	0.99	1%	1.16	17%	0.94	-19%
Usage charge	0.25	0.25	0.26	1%	0.30	17%	0.24	-19%
North Coast								
HS Entitlement charge	2.09	2.16	1.67	-23%	24.96	1397%	2.71	-89%
GS Entitlement charge	1.61	1.66	1.67	0%	24.96	1397%	2.71	-89%
Usage charge	1.08	1.11	1.12	0%	16.75	1397%	1.82	-89%
Hunter								
HS Entitlement charge	3.30	3.41	2.64	-23%	1.11	-58%	1.11	-1%
GS Entitlement charge	2.36	2.44	2.64	8%	1.11	-58%	1.11	-1%
Usage charge	2.35	2.43	2.63	8%	1.11	-58%	1.10	-1%
South Coast								
HS Entitlement charge	2.08	2.15	1.67	-22%	4.02	140%	2.69	-33%
GS Entitlement charge	1.60	1.65	1.67	1%	4.02	140%	2.69	-33%
Usage charge	1.07	1.10	1.12	1%	2.69	140%	1.80	-33%

Other factors affecting the final prices are the elimination of the bulk discounts in the Lachlan, Murray and Murrumbidgee valleys, the introduction of a minimum bill
and the cap place on real price increases on 13 per cent per year in the North and South Coast valleys

State Water

Region/river valley	Current price 2005/06 (1)		Fixed to usage ratio changed to 40:60 (2)		Cost factors (3)		Final price (4)	
	$ nominal	$ real 2006/07	2009/10 price $ real 2006/07	% change from 2005/06	2009/10 price $ real 2006/07	% change from (2)	2009/10 price $ real 2006/07	% change from (3)
Border								
HS entitlement ($ML or $/unit share)	4.00	4.13	3.18	-23%	4.61	45%	3.96	-14%
GS entitlement ($ML or $/unit share)	2.68	2.77	2.13	-23%	3.09	45%	3.09	0%
Usage ($/ML)	3.11	3.21	4.08	27%	5.92	45%	5.92	0%
Gwydir								
HS entitlement ($ML or $/unit share)	4.25	4.39	2.92	-33%	4.65	59%	5.51	19%
GS entitlement ($ML or $/unit share)	2.82	2.91	1.94	-33%	3.08	59%	3.05	-1%
Usage ($/ML)	3.29	3.40	5.10	50%	8.11	59%	8.11	0%
Namoi								
HS entitlement ($ML or $/unit share)	8.04	8.31	6.88	-17%	10.04	46%	8.43	-16%
GS entitlement ($ML or $/unit share)	5.36	5.54	4.59	-17%	6.69	46%	6.74	1%
Usage ($/ML)	6.42	6.63	7.79	18%	11.37	46%	11.37	0%
Peel								
HS entitlement ($ML or $/unit share)	11.52	11.90	6.64	-44%	7.42	12%	10.41	40%
GS entitlement ($ML or $/unit share)	5.05	5.22	2.91	-44%	3.25	12%	1.55	-52%
Usage ($/ML)	9.19	9.49	20.83	119%	23.29	12%	23.29	0%
Lachlan								
HS entitlement ($ML or $/unit share)	5.80	5.99	3.59	-40%	4.28	19%	6.36	48%
GS entitlement ($ML or $/unit share)	3.86	3.99	2.39	-40%	2.85	19%	2.59	-9%
Usage ($/ML)	4.42	4.57	8.07	77%	9.64	19%	9.81	2%
Macquarie								
HS entitlement ($ML or $/unit share)	3.66	3.78	2.69	-29%	3.75	40%	5.23	39%
GS entitlement ($ML or $/unit share)	2.81	2.90	2.06	-29%	2.88	40%	2.78	-3%
Usage ($/ML)	3.79	3.92	5.50	40%	7.67	40%	7.67	0%

Region/river valley	Current price 2005/06 (1)		Fixed to usage ratio changed to 40:60 (2)		Cost factors (3)		Final price (4)	
	$ nominal	$ real 2006/07	2009/10 price $ real 2006/07	% change from 2005/06	2009/10 price $ real 2006/07	% change from (2)	2009/10 price $ real 2006/07	% change from (3)
Murray								
HS entitlement ($ML or $/unit share)	4.43	4.58	2.41	-47%	2.73	13%	2.49	-9%
GS entitlement ($ML or $/unit share)	4.02	4.15	2.19	-47%	2.47	13%	1.99	-19%
Usage ($/ML)	1.09	1.13	2.79	148%	3.16	13%	3.62	15%
Murrumbidgee								
HS entitlement ($ML or $/unit share)	3.28	3.39	1.69	-50%	1.74	3%	2.23	28%
GS entitlement ($ML or $/unit share)	3.11	3.21	1.60	-50%	1.65	3%	1.37	-17%
Usage ($/ML)	0.82	0.85	2.71	220%	2.81	3%	3.21	14%
North Coast								
HS entitlement ($ML or $/unit share)	10.59	10.94	6.88	-37%	5.27	-23%	5.07	-4%
GS entitlement ($ML or $/unit share)	8.14	8.41	5.29	-37%	4.05	-23%	4.06	0%
Usage ($/ML)	5.42	5.60	32.88	487%	25.21	-23%	25.21	0%
Hunter								
HS entitlement ($ML or $/unit share)	6.61	6.83	6.24	-9%	12.63	102%	18.31	45%
GS entitlement ($ML or $/unit share)	4.72	4.88	4.46	-9%	9.02	102%	6.10	-32%
Usage ($/ML)	4.70	4.86	5.50	13%	11.12	102%	11.12	0%
South Coast								
HS entitlement ($ML or $/unit share)	10.60	10.95	5.51	-50%	7.52	37%	9.61	28%
GS entitlement ($ML or $/unit share)	8.15	8.42	4.24	-50%	5.78	37%	5.65	-2%
Usage ($/ML)	5.43	5.61	16.56	195%	22.60	37%	22.60	0%

Note: Other factors affecting the final prices are:

1. Changing wholesale discounts in the Lachlan, Murray and Murrumbidgee to the rebate levels outlined in Chapter 11.
2. Adjusting high security premiums to the levels outlined in Chapter 11.

APPENDIX 7 BASIS OF ALLOCATING MDBC ASSET COSTS ACROSS VALLEYS

MDBC Category	Assets	Proposed allocation	Comment
Category 1a	Dartmounth Hume Yarrawonga Torrumbarry Menindee Lakes River Gauging (NSW & Vic) Water Quality (NSW & Vic)	Murray Valley	These assets are all in the Murray valley and their costs should be met by the Murray Valley users as their prime function is to regulate flow in the river.
Category 1b	Euston Lock 9 Lake Victoria Barrages River (Gauging SA) Water Quality (SA)	Southern basin	These assets receive water out of the Murray, Murrumbidgee and Goulburn Rivers. These assets have been allocated to the Southern Murray as their prime function is to regulate flow in the lower Murray as a consequence of total upstream development.
Category 2a	Mildura Wentworth	Southern basin	Mildura and Wentworth are between the confluence of the Murrumbidgee and Darling Rivers. They have been allocated to the Southern Basin as they are mostly there because of consumption upstream.
Category 2b	Locks 1-8	Total basin	Locks 1-8 are below the confluence of the Darling River. Therefore they have been allocated to the total basin.
Salinity		Total basin	These have been allocated to the Total Basin as extractions in all upstream rivers impact on salinity.
Murray Mouth		Total basin	These have been allocated to the Total Basin as extractions in upstream rivers do impact in flows to the sea.
Environment		Murray Valley	These have been allocated to the Murray Valley as the environmental work is primarily a result of Snowy flows.

APPENDIX 8 REPORTING OBLIGATIONS

State Water

State Water to provide Customer Service Committees with valley based reports on a six monthly basis. The valley based reports should include:

- revenue collected from water charges
- operating expenses separately identified by activity/product codes
- capital works expenditure separately identified by activity/product codes
- current year budget, year to date expenditure/revenues
- FTE staff reports (for the IPART regulated component of the business), including details of all new positions filled for the reporting period and vacancies unfilled.

State Water to provide the Tribunal and Customer Service Committees on an annual basis the following information:

- Audited Consolidated financial accounts (Profit/Loss Statement, Balance Sheet) with a reconciliation to regulated component of business and identifying State Government financial contributions.
- Valley statements as described above:
  - also including head office costs allocated to the valley and the apportionment process used
  - explaining the variation between actual operating/capital expenditure and budgeted expenditure
  - on a valley basis
  - Forecasted operating and capital expenditure budgets for following financial year.
- Compliance with Water Sharing Plans.
- Water use penalties enforcement action undertaken (subject to confidentiality) .

Department of Natural Resources

Department of Natural Resources to provide the Tribunal on an annual basis with the following information:

- Audited Consolidated financial accounts, with a reconciliation to the IPART regulated component of business.
- Valley based financial reports which include the following information:
  - revenue collected from water charges
  - operating expenses separately identified by WRM activity codes
  - current year budget, actual expenditure/revenues
  - explaining the variation between actual operating/capital expenditure and budgeted expenditure
  - explanation of how costs have been apportioned to individual valleys
  - forecasted operating budgets for following financial year
  - FTE staff reports on resources allocated to each of the WRM activities.
- Water availability reports.
- Reporting of environmental water usage for individual river valleys. This should be consistent with the methodology used to account for and report on the environmental water usage, as agreed with the NWI.