IPART
New South Wales

Independent Pricing and Regulatory Tribunal

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

from 1 August 2006 to 30 June 2010

Water - Draft Determinations and Draft Report
May 2006

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for
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Draft Determinations Nos 3 and 4, 2006

May 2006

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Draft Determination No 3, 2006

Section 11(1)
Independent Pricing and Regulatory Tribunal Act 1992

State Water Corporation

Independent Pricing and Regulatory Tribunal
of New South Wales

Reference No 05/545

1. Background

(a) Section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992 (***IPART Act***)* permits the Tribunal to conduct investigations and make reports to the Minister administering the IPART Act on the determination of the pricing for a government monopoly service supplied by a government agency specified in Schedule 1 of the IPART Act.

(b) State Water Corporation (**Corporation**) (as a statutory State owned corporation established by section 4 of the *State Water Corporation Act 2004* (**SWC Act**)) is listed in Schedule 1 of the IPART Act as a "government agency" for which the Tribunal has a standing reference for the purposes of section 11 of the IPART Act.

(c) The Corporation's functions under the SWC Act (section 6) include:

(1) to capture and store water and to release water:

(a) to persons entitled to take the water, including release to regional towns;

(b) for the purposes of flood management; and

(c) for any other lawful purpose, including the release of environmental water; and

(2) to construct, maintain and operate water management works.

(d) Under section 29 of the SWC Act, the Corporation may impose fees or charges on any person to whom the Corporation provides a service in the exercise of its functions, including any person to whom the Corporation makes water available.

(e) Under section 4(7) of the IPART Act, the Corporation is taken to be the supplier of the services for which fees and charges are payable under the SWC Act, and which are declared to be government monopoly services.

(f) Under clause 3 of the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004,* services supplied by the Corporation which involve:

(1) the making available of water;

(2) the making available of the Corporation's water supply facilities; or

(3) the supplying of water, whether by means of the Corporation's facilities or otherwise,

are "government monopoly services" (**Monopoly Services**) for the purposes of sections 4 and 11(1) of the IPART Act. Accordingly, the Tribunal may conduct investigations and report to the Minister administering the IPART Act on the determination of prices for these Monopoly Services supplied by the Corporation.

(g) In practice, charges for the Corporation's water delivery activities are made as charges under licences, permits, approvals or authorities granted:

(1) by the Minister under Chapter 3 of the *Water Management Act 2000* (**Water Management Act**) (in areas of NSW in which proclamations under sections 55A and 88A of the Water Management Act are in force); and

(2) by the Water Administration Ministerial Corporation (**WAMC**) under the *Water Act 1912* (**Water Act**) (in other areas of NSW).

(h) Accordingly, in determining prices for the Corporation's Monopoly Services, the Tribunal has determined prices payable for these services under various licences, permits, approvals or authorities granted under the Water Management Act and the Water Act.

(i) In investigating and reporting on the pricing of the Corporation's Monopoly Services, the Tribunal has had regard to a broad range of matters, including the criteria set out in section 15(1) of the IPART Act.

(j) In accordance with section 13A(1) of the IPART Act, the Tribunal has fixed the maximum price for the Corporation's Monopoly Services and/or established a methodology for fixing the maximum price. Schedule 3 sets out the Tribunal's reasons for choosing to make a determination that involves setting the methodology for fixing a maximum price for entitlement charges and usage charges.

(k) Under section 18(2) of the IPART Act, the Corporation may not fix a price for Monopoly Services below that determined by the Tribunal without the approval of the Treasurer.

2. Application of this determination

(a) Under section 13A of the IPART Act, this determination fixes the maximum prices (and/or sets a methodology for fixing those maximum prices) that may be charged for the Corporation's Monopoly Services under Water Licences that authorise the extraction of water from regulated rivers.

(b) For the avoidance of doubt, this determination does not apply to the following services provided by the Corporation:

(1) management services provided by the Corporation to the Lowbidgee Flood Control and Irrigation District Trust established to manage floodplain, wetlands and irrigation works in the Lowbidgee Flood Control and Irrigation District;

(2) weed clearing and pumping/operations services provided by the Corporation to Gol Gol Creek and Gol Gol Creek North; and

(3) the rights granted by the Corporation to hydropower operators to install their facilities on the Corporation's dams and use water in its storages for power generation, or the maintenance and emergency response services provided by the Corporation to these operators.

(c) This determination commences on the later of 1 August 2006 and the date that it is published in the NSW Government Gazette (**Commencement Date**).

(d) The maximum prices in this determination apply from the Commencement Date to 30 June 2010. The maximum prices in this determination prevailing at 30 June 2010 continue to apply beyond 30 June 2010 until this determination is replaced.

3. Replacement of Determination No. 8 of 2005

Determination No. 8 of 2005 (Reference No 04/291), to the extent that it relates to pricing for the Corporation's Monopoly Services, is replaced by this determination from the Commencement Date. The replacement does not affect anything done or omitted to be done, or rights or obligations accrued, under that determination prior to its replacement.

4. Monitoring

The Tribunal may monitor the performance of the Corporation for the purposes of:

(a) establishing and reporting on the level of compliance by the Corporation with this determination; and

(b) preparing a periodic review of pricing policies in respect of the Monopoly Services supplied by the Corporation.

5. Schedules

Schedules 1 and 2 and the Tables in those Schedules set out the maximum prices that the Corporation may charge for the Monopoly Services specified in the Schedule. They operate together with Schedules 3, 4 and 5.

6. Definitions and Interpretation

Definitions and interpretation provisions used in this determination are set out in Schedule 6.

Schedule 1

Regulated Rivers

1. Application

This Schedule sets the maximum prices that may be charged for the Corporation's Monopoly Services under a Water Licence that authorises the extraction of water from a Regulated River, for the period to which this determination applies.

2. Maximum charges

2.1 Subject to clause 4 of this Schedule, the maximum charges that may be levied for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule are the following charges (and no other charges):

(a) an entitlement charge (being a charge expressed in dollars per megalitre of Entitlement or in dollars per unit share) in Table 1 (multiplied by the conversion factor in clause 3 of this schedule and applied to the licence holder's Entitlement for the relevant water source or river valley in that table); and

(b) a usage charge (being a charge expressed in dollars per megalitre of water actually extracted) in Table 2, based on the licence holder's usage for the relevant year and the relevant water source or river valley in that table.

2.2 Despite clause 2.1 of this schedule, only a usage charge may be levied by the Corporation for:

(a) a High Flow Licence; or

(b) a Supplementary Water Access Licence.

3. Conversion factor

3.1 If a WA Licence is converted to a WMA Licence and that WMA Licence is expressed as a specified number of unit shares then the following conversion factor is to be applied to the entitlement charges ($ per unit share) in Table 1:

$$CF = \frac{A}{B}$$

Where:

CF – conversion factor

A- the volume of water (expressed in megalitres) that the total number of unit shares of that licence represents immediately after that WMA Licence is issued

B – the volume of water (expressed in megalitres) entitlements immediately before that WMA Licence is issued.

3.2 A worked example of the application of this clause is set out in Part 1, Schedule 5.

4. Rebate on total bill for entitlement and usage charges

A licence holder in Table 3 will receive the rebate (listed for that licence holder in Table 3) on that licence holder's total bill for entitlement and/or usage charges.

5. Murrumbidgee and Yanco Columbo System

5.1 In addition to the charges set out in Tables 1 and 2, a licence holder who is an Irrigator in respect of the Yanco Columbo System may be charged a levy of $0.90 per megalitre of Entitlement or per unit share.

5.2 Clauses 3 and 4 of this Schedule do not apply to these charges.

6. User initiated projects

In addition to the charges set out in Tables 1 and 2, if a group of Irrigators (**Group of Irrigators**) requests the Corporation to undertake a project to improve water use and environmental outcomes, the Corporation may determine the appropriate levy to charge the Group of Irrigators to undertake that project only if all the following conditions are satisfied:

(a) there is substantial support from the Group of Irrigators for that project;

(b) there is substantial agreement from the Group of Irrigators on the amount of the levy; and

(c) the Corporation has provided evidence satisfactory to the Tribunal that paragraphs (a) and (b) above have been complied with.

7. Annual price adjustment mechanism for SWC MDBC Costs

7.1 For the periods 1 July 2008 to 30 June 2009 and 1 July 2009 to 30 June 2010:

(a) the entitlement charge for the Murray Valley in Table 1 will be adjusted according to the formula in Part 1, Schedule 3 (**Adjusted Entitlement Charge**); and/or

(b) the usage charge for the Murray Valley in Table 2 will be adjusted according to the formula in Part 2, Schedule 3 (**Adjusted Usage Charge**)**,**

only if all of the following conditions are satisfied:

(c) the Corporation must submit to the Tribunal by 30 April 2008 (the relevant year t for the period from 1 July 2008 to 30 June 2009) and 30 April 2009 (the relevant year t for the period from 1 July 2009 to 30 June 2010):

(1) an audited report from an independent auditor on the SWC MDBC Costs and the volumes of water sold by the Corporation in the Murray Valley for year t-2 (which is two years immediately preceding the relevant year t) (**Required Year**); and

(2) a detailed calculation of the Adjusted Entitlement Charge and the Adjusted Usage Charge for the Tribunal's verification; and

(d) the Tribunal gives the Corporation written notice that the Tribunal is satisfied with the audited report and the Corporation's calculation of the Adjusted Entitlement Charge and the Adjusted Usage Charge; and

(e) the differences between the SWC MDBC Costs for the Required Year and the SWC MDBC Costs allowed by the Tribunal (as set out in Table 4) for the Required Year is more than 5%.

7.2 Worked examples of the application of this clause are set out in Part 2, Schedule 5.

Tables 1, 2, 3 and 4

Table 1 Entitlement Charges for Regulated Rivers

Water source/river valley	Commencement Date to 30 June 2007		1 July 2007 to 30 June 2008		1 July 2008 to 30 June 2009		1 July 2009 to 30 June 2010	
	High security ($/ML of Entitlement or $/unit share)	General security ($/ML of Entitlement or $/unit share)	High security ($/ML of Entitlement or $/unit share)	General security ($/ML of Entitlement or $/unit share)	High security ($/ML of Entitlement or $/unit share)	General security ($/ML of Entitlement or $/unit share)	High security ($/ML of Entitlement or $/unit share)	General security ($/ML of Entitlement or $/unit share)
Border	4.21	2.82	4.29 x $(1+\Delta CPI_1)$	2.87 x $(1+\Delta CPI_1)$	4.36 x $(1+\Delta CPI_2)$	2.91 x $(1+\Delta CPI_2)$	4.42 x $(1+\Delta CPI_3)$	2.95 x $(1+\Delta CPI_3)$
Gwydir	4.50	2.84	4.61 x $(1+\Delta CPI_1)$	2.77 x $(1+\Delta CPI_1)$	4.70 x $(1+\Delta CPI_2)$	2.71 x $(1+\Delta CPI_2)$	4.79 x $(1+\Delta CPI_3)$	2.65 x $(1+\Delta CPI_3)$
Namoi	8.43	5.62	8.56 x $(1+\Delta CPI_1)$	5.71 x $(1+\Delta CPI_1)$	8.68 x $(1+\Delta CPI_2)$	5.78 x $(1+\Delta CPI_2)$	8.78 x $(1+\Delta CPI_3)$	5.85 x $(1+\Delta CPI_3)$
Peel	11.69	4.24	11.51 x $(1+\Delta CPI_1)$	3.33 x $(1+\Delta CPI_1)$	11.32 x $(1+\Delta CPI_2)$	2.47 x $(1+\Delta CPI_2)$	11.14 x $(1+\Delta CPI_3)$	1.66 x $(1+\Delta CPI_3)$
Lachlan	5.91	3.53	5.83 x $(1+\Delta CPI_1)$	3.11 x $(1+\Delta CPI_1)$	5.76 x $(1+\Delta CPI_2)$	2.70 x $(1+\Delta CPI_2)$	5.69 x $(1+\Delta CPI_3)$	2.32 x $(1+\Delta CPI_3)$
Macquarie	3.98	2.77	4.18 x $(1+\Delta CPI_1)$	2.64 x $(1+\Delta CPI_1)$	4.36 x $(1+\Delta CPI_2)$	2.52 x $(1+\Delta CPI_2)$	4.52 x $(1+\Delta CPI_3)$	2.40 x $(1+\Delta CPI_3)$
Murray	4.52	3.81	4.47 x $(1+\Delta CPI_1)$	3.50 x $(1+\Delta CPI_1)$	4.42 x $(1+\Delta CPI_2)$	3.20 x $(1+\Delta CPI_2)$	4.37 x $(1+\Delta CPI_3)$	2.91 x $(1+\Delta CPI_3)$
Murrumbidgee	2.90	2.61	2.45 x $(1+\Delta CPI_1)$	2.04 x $(1+\Delta CPI_1)$	2.03 x $(1+\Delta CPI_2)$	1.50 x $(1+\Delta CPI_2)$	1.62 x $(1+\Delta CPI_3)$	1.00 x $(1+\Delta CPI_3)$
North Coast	8.84	6.70	6.87 x $(1+\Delta CPI_1)$	5.11 x $(1+\Delta CPI_1)$	5.02 x $(1+\Delta CPI_2)$	3.60 x $(1+\Delta CPI_2)$	3.27 x $(1+\Delta CPI_3)$	2.18 x $(1+\Delta CPI_3)$
Hunter	7.33	4.61	7.81 x $(1+\Delta CPI_1)$	4.36 x $(1+\Delta CPI_1)$	8.25 x $(1+\Delta CPI_2)$	4.13 x $(1+\Delta CPI_2)$	8.66 x $(1+\Delta CPI_3)$	3.90 x $(1+\Delta CPI_3)$
South Coast	10.46	7.78	10.00 x $(1+\Delta CPI_1)$	7.19 x $(1+\Delta CPI_1)$	9.56 x $(1+\Delta CPI_2)$	6.63 x $(1+\Delta CPI_2)$	9.14 x $(1+\Delta CPI_3)$	6.10 x $(1+\Delta CPI_3)$

Table 2 Usage Charges for Regulated Rivers

Water source/river valley	Commencement Date to 30 June 2007 ($/ML)	1 July 2007 to 30 June 2008 ($/ML)	1 July 2008 to 30 June 2009 ($/ML)	1 July 2009 to 30 June 2010 ($/ML)
Border	3.88	4.51 x $(1+\Delta CPI_1)$	5.10 x $(1+\Delta CPI_2)$	5.65 x $(1+\Delta CPI_3)$
Gwydir	4.40	5.34 x $(1+\Delta CPI_1)$	6.22 x $(1+\Delta CPI_2)$	7.04 x $(1+\Delta CPI_3)$
Namoi	7.54	8.40 x $(1+\Delta CPI_1)$	9.20 x $(1+\Delta CPI_2)$	9.94 x $(1+\Delta CPI_3)$
Peel	13.72	17.70 x $(1+\Delta CPI_1)$	21.43 x $(1+\Delta CPI_2)$	24.93 x $(1+\Delta CPI_3)$
Lachlan	5.72	6.81 x $(1+\Delta CPI_1)$	7.82 x $(1+\Delta CPI_2)$	8.77 x $(1+\Delta CPI_3)$
Macquarie	4.66	5.36 x $(1+\Delta CPI_1)$	6.02 x $(1+\Delta CPI_2)$	6.64 x $(1+\Delta CPI_3)$
Murray	2.31	3.42 x $(1+\Delta CPI_1)$	4.46 x $(1+\Delta CPI_2)$	5.43 x $(1+\Delta CPI_3)$
Murrumbidgee	1.26	1.64 x $(1+\Delta CPI_1)$	2.00 x $(1+\Delta CPI_2)$	2.34 x $(1+\Delta CPI_3)$
North Coast	12.45	18.89 x $(1+\Delta CPI_1)$	24.93 x $(1+\Delta CPI_2)$	30.59 x $(1+\Delta CPI_3)$
Hunter	7.22	9.44 x $(1+\Delta CPI_1)$	11.53 x $(1+\Delta CPI_2)$	13.48 x $(1+\Delta CPI_3)$
South Coast	10.68	15.44 x $(1+\Delta CPI_1)$	19.91 x $(1+\Delta CPI_2)$	24.10 x $(1+\Delta CPI_3)$

Table 3 Rebate on total bill for entitlement charges and usage charges for Regulated Rivers

Licence holder	Commencement Date to 30 June 2007 ($thousand)	1 July 2007 to 30 June 2008 ($thousand)	1 July 2008 to 30 June 2009 ($thousand)	1 July 2009 to 30 June 2010 ($thousand)
Murray Irrigation Limited	1,622	1,622 x $(1+\Delta CPI_1)$	1,622 x $(1+\Delta CPI_2)$	1,622 x $(1+\Delta CPI_3)$
Western Murray Irrigation Limited	23	23 x $(1+\Delta CPI_1)$	23 x $(1+\Delta CPI_2)$	23 x $(1+\Delta CPI_3)$
West Corurgan	30	30 x $(1+\Delta CPI_1)$	30 x $(1+\Delta CPI_2)$	30 x $(1+\Delta CPI_3)$
Moira Irrigation Scheme	14	14 x $(1+\Delta CPI_1)$	14 x $(1+\Delta CPI_2)$	14 x $(1+\Delta CPI_3)$
Eagle Creek Scheme	6	6 x $(1+\Delta CPI_1)$	6 x $(1+\Delta CPI_2)$	6 x $(1+\Delta CPI_3)$
Murrumbidgee Irrigation Limited	626	626 x $(1+\Delta CPI_1)$	626 x $(1+\Delta CPI_2)$	626 x $(1+\Delta CPI_3)$
Coleambally Irrigation Limited	268	268 x $(1+\Delta CPI_1)$	268 x $(1+\Delta CPI_2)$	268 x $(1+\Delta CPI_3)$
Jemalong Irrigation Limited	75	75 x $(1+\Delta CPI_1)$	75 x $(1+\Delta CPI_2)$	75 x $(1+\Delta CPI_3)$

Table 4 SWC MDBC Costs allowed by the Tribunal

	Commencement Date to 30 June 2007 ($million)	1 July 2007 to 30 June 2008 ($million)	1 July 2008 to 30 June 2009 ($million)	1 July 2009 to 30 June 2010 ($million)
SWC MDBC Costs allowed by the Tribunal	11.452	11.834 x $(1+\Delta CPI_1)$	12.418 x $(1+\Delta CPI_2)$	12.659 x $(1+\Delta CPI_3)$

Schedule 2

Fish River Water Supply Scheme

1. Application

This Schedule sets the maximum prices that may be charged for the Corporation's Monopoly Services to customers in the Fish River Water Supply Scheme, for the period to which this determination applies.

2. Maximum charges

The maximum charges that may be levied for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule are the following charges (and no other charges):

(a) a fixed access charge in Table 5 for the relevant year and customer in that table; and

(b) a use rate charge (being a charge expressed in dollars per kilolitre of water actually used) in Table 6, for the relevant year and customer in that table.

Tables 5 and 6

Table 5 Fish River Water Supply Scheme Fixed Access Charges

Consumer	Commence-ment Date to 30 June 2007 ($/kL)	1 July 2007 to 30 June 2008 ($/kL)	1 July 2008 to 30 June 2009 ($/kL)	1 July 2009 to 30 June 2010 ($/kL))
Bulk Unfiltered Water				
Delta Electricity	0.213	0.222	0.231	0.240
Sydney Catchment Authority	0.213	0.222	0.231	0.240
The Oberon Council	0.213	0.222	0.231	0.240
Individual Minor Customers	0.266	0.277	0.288	0.299
Bulk Filtered Water				
Lithgow Council	0.319	0.332	0.345	0.359
Individual Minor Customers	0.372	0.387	0.403	0.419

Table 6 Fish River Water Supply Scheme Use Rate Charges

Consumer	Commencement Date to 30 June 2007		1 July 2007 to 30 June 2008		1 July 2008 to 30 June 2009		1 July 2009 to 30 June 2010	
	Use rate up to MAQ ($/kL)	Use rate above MAQ ($/kL)	Use rate up to MAQ ($/kL)	Use rate above MAQ ($/kL)	Use rate up to MAQ ($/kL)	Use rate above MAQ ($/kL)	Use rate up to MAQ ($/kL)	Use rate above MAQ ($/kL)
Bulk Unfiltered Water								
Delta Electricity	0.239	0.452	0.249	0.470	0.259	0.489	0.269	0.509
Sydney Catchment Authority	0.239	0.452	0.249	0.470	0.259	0.489	0.269	0.509
The Oberon Council	0.239	0.452	0.249	0.470	0.259	0.489	0.269	0.509
Individual Minor Customers	0.479	0.746	0.499	0.776	0.519	0.807	0.539	0.839
Bulk Filtered Water								
Lithgow Council	0.346	0.666	0.360	0.692	0.375	0.720	0.390	0.749
Individual Minor Customers	0.586	0.959	0.609	0.997	0.633	1.037	0.659	1.079

Schedule 3

Price adjustment formulas

Part 1 - Adjusted entitlement charge

$$P_{tae} = P_{te} \times \left(\frac{SRR_{t-2} - MCA_{t-2} + MAC_{t-2}}{SRR_{t-2}} \right)$$

Where:

P_{tae} – adjusted entitlement charge for the relevant year (**Year t**) for the Murray Valley;

P_{te} – entitlement charge for Year t for the Murray Valley, as set out in Table 1 of schedule 1;

SRR_{t-2} – Smoothed revenue requirement for the Murray Valley which the Tribunal forecast would be delivered by the Corporation through charges in Tables 1 and 2 of schedule 1 in the year which is two years immediately preceding Year t (**Year t-2**), as set out in the table 7 below:

Table 7 Smoothed revenue requirement forecast by the Tribunal for the Murray Valley

	Commencement Date to 30 June 2007 ($million)	1 July 2007 to 30 June 2008 ($million)	1 July 2008 to 30 June 2009 ($million)	1 July 2009 to 30 June 2010 ($million)
Smoothed revenue requirement forecast by the Tribunal	11.641	13.134 x $(1+\Delta CPI_1)$	14.526 x $(1+\Delta CPI_2)$	15.820 x $(1+\Delta CPI_3)$

MCA_{t-2} – SWC MDBC Costs allowed by the Tribunal for Year t-2, as set out in table 4 of schedule 1.

MAC_{t-2} – SWC MDBC Costs actually paid by the Corporation to the NSW Government for Year t-2.

Part 2 - Adjusted usage charge

$$P_{tau} = P_{tu} \times \left(\frac{SRR_{t-2} - MCA_{t-2} + MAC_{t-2}}{SRR_{t-2}} \right) x \left(\frac{UVP_{t-2}}{UVA_{t-2}} \right)$$

Where:

P_{tau} – adjusted usage charge for the relevant year (**Year t**) for the Murray Valley;

P_{tu} – usage charge for Year t for the Murray Valley, as set out in Table 2 of schedule 1;

SRR_{t-2} – Smoothed revenue requirement for the Murray Valley which the Tribunal forecast would be delivered by the Corporation through charges in Tables 1 and 2 of schedule 1 in the year which is two years immediately preceding Year t (**Year t-2**), as set out in table 7 above:

MCA_{t-2} – SWC MDBC Costs allowed by the Tribunal for Year t-2, as set out in table 4 of schedule 1.

MAC_{t-2} – SWC MDBC Costs actually paid by the Corporation to the NSW Government for Year t-2.

UVP_{t-2} – the volume of water assumed by the Tribunal that customers in the Murray Valley will use for Year t-2, as set out in table 8 below:

Table 8 Volume of water for customers in the Murray Valley

	Commencement Date to 30 June 2007 (ML)	1 July 2007 to 30 June 2008 (ML)	1 July 2008 to 30 June 2009 (ML)	1 July 2009 to 30 June 2010 (ML)
Volume of water assumed by the Tribunal that a customer in the Murray	1,934,830	1,934,830	1,934,830	1,934,830

UVA_{t-2} – the volume of water actually used by customers in the Murray Valley for Year t-2.

Schedule 4

Statement of Reasons under section 13A(3) IPART Act

Under the IPART Act the Tribunal may set maximum prices, determine a methodology for setting maximum prices or both. In this Determination, the Tribunal has set maximum prices for each year of the regulatory period, and has included a methodology for the automatic adjustment of those prices (**Price Adjustment Mechanism**) for certain years within the regulatory period.

The Price Adjustment Mechanism makes allowance for the costs which the NSW Government contributes to the MDBC as determined by the MDBC. Once the NSW Government contributes to the MDBC, the Corporation is required to bear a portion of that contribution and recover that portion through the prices of its Monopoly Services.

At the time of making this determination, the Tribunal only has the Corporation's forecast SWC MDBC Costs over the period of this determination.

The inclusion of the Price Adjustment Mechanism will ensure that the *actual* SWC MDBC Costs are reflected in the pricing of its Services, and passed on to users. The SWC MDBC Costs are of such significance to the Corporation's total cost base throughout the regulatory period (particularly with respect to the Murray Valley) that the Tribunal is not satisfied that it is practical to set maximum prices based upon forecast costs alone.

Schedule 5

Worked examples

Part 1 – clause 3 Schedule 1

Assuming that:

- volume of water that the total number of unit shares represents immediately after that WMA Licence is issued – 800ML (A)
- volume of water entitlements immediately before that WMA Licence is issued – 1,000ML (B)

The following conversion factor is to be applied to the entitlement charge in table 1:

$$CF = \frac{A}{B}$$

$$CF = \frac{800ML}{1000ML}$$

$$CF = 0.8$$

Part 2 - clause 6.2, Schedule 1

(a) SWC MDBC Costs allowed by the Tribunal is greater than the SWC MDBC Costs actually paid by the Corporation

1. Calculation of the annual price adjustment mechanism for SWC MDBC Costs for year t (being year 2008/09) for high security entitlement charge

Assuming that:

- high security entitlement charge for 2008/09 ($P_{2008/09e}$) for the Murray Valley equals \$4.70
- the smoothed revenue requirement for the Murray Valley which the Tribunal forecast would be delivered by the Corporation through charges in Tables 1 and 2 for the Year t-2 (being year 2006/07 ($SRR_{2006/07}$)) equals \$11. 641 million as set out in schedule 3
- SWC MDBC Costs allowed by the Tribunal for Year t-2 (being year 2006/07 ($MCA_{2006/07}$)) equals \$11.452 million as per table 4 of schedule 1
- SWC MDBC Costs actually paid by the Corporation to the NSW Government for Year t-2 (being year 2006/07 ($MAC_{2006/07}$)) equals \$10.000 million

The adjusted high security entitlement charge for the year 2008/09 for the Murray Valley is calculated as follows:

$$P_{2008/09ae} = P_{2008/09e} \times \left(\frac{SRR_{2006/07} - MCA_{2006/07} + MAC_{t-2}}{SRR_{2006/07}} \right)$$

$$P_{2008/09ae} = 4.70 \times \left(\frac{11.641 - 11.452 + 10.000}{11.641} \right)$$

$$P_{2008/09ae} = 4.11$$

Therefore, the adjusted high security entitlement charge for 2008/09 for the Murray Valley is $4.11/ML of Entitlement.

2. Calculation of the annual price adjustment mechanism for SWC MDBC Costs for year t (being year 2008/09) for general security entitlement charge

Assuming that:

- general security entitlement charge for 2008/09 ($P_{2008/09e}$) for the Murray Valley equals $3.40,
- the smoothed revenue requirement for the Murray Valley which the Tribunal forecast would be delivered by the Corporation through charges in Tables 1 and 2 for the Year t-2 (being year 2006/07 ($SRR_{2006/07}$)) equals $11.641 million as set out in schedule 3
- SWC MDBC Costs allowed by the Tribunal for Year t-2 (being year 2006/07 ($MCA_{2006/07}$)) equals $11.452 million as per table 4 of schedule 1,
- SWC MDBC Costs actually paid by the Corporation to the NSW Government for Year t-2 (being year 2006/07 ($MAC_{2006/07}$)) equals $10.000 million.

The adjusted general security entitlement charge for the year 2008/09 for the Murray Valley is calculated as follows:

$$P_{2008/09ae} = P_{2008/09e} \times \left(\frac{SRR_{2006/07} - MCA_{2006/07} + MAC_{t-2}}{SRR_{2006/07}} \right)$$

$$P_{2008/09ae} = 3.40 \times \left(\frac{11.641 - 11.452 + 10.000}{11.641} \right)$$

$$P_{2008/09ae} = 2.98$$

Therefore, the adjusted general security entitlement charge for 2008/09 for the Murray Valley is $2.98/ML of Entitlement.

3. Calculation of the annual price adjustment mechanism for SWC MDBC Costs for year t (being year 2008/09) for usage charge

Assuming that:

- usage charge for 2008/09 ($P_{2008/09u}$) for the Murray Valley equals $4.74
- the smoothed revenue requirement for the Murray Valley which the Tribunal forecast would be delivered by the Corporation through charges in Tables 1 and 2 for the Year t-2 (being year 2006/07 ($SRR_{2006/07}$)) equals $11.641 million as set out in schedule 3
- SWC MDBC Costs allowed by the Tribunal for Year t-2 2006/07 ($MCA_{2006/07}$) equals $11.452 million as per table 4 of schedule 1
- SWC MDBC Costs actually paid by the Corporation to the NSW Government for Year t-2 (being year 2006/07 ($MAC_{2006/07}$)) equals $10.000 million
- the volume of water assumed by the Tribunal that customers in the Murray Valley for Year t-2 (being year 2006/07 ($UVP_{2006/07}$)) equals 1,9430,830 ML as set out in schedule 3
- the volume of water actually used by customers in the Murray Valley for Year t-2 (year 2006/07 ($UVA_{2006/07}$)) equals 1,740,000 ML.

The adjusted usage charge for the year 2008/09 for the Murray Valley is calculated as follows:

$$P_{2008/09au} = P_{2008/09u} \times \left(\frac{SRR_{2006/07} - MCA_{2006/07} + MAC_{t-2}}{SRR_{2006/07}} \right) \times \left(\frac{UVP_{2006/07}}{UVA_{2006/07}} \right)$$

$$P_{2008/09au} = 4.74 \times \left(\frac{11.641 - 11.452 + 10.000}{11.641} \right) \times \left(\frac{1{,}934{,}830}{1{,}740{,}000} \right)$$

$$P_{2008/09au} = 4.61$$

Therefore, the adjusted usage charge for 2008/09 for the Murray Valley is $4.61/ML.

(b) SWC MDBC Costs allowed by the Tribunal is less than the SWC MDBC Costs actually paid by the Corporation

1. Calculation of the annual price adjustment mechanism for SWC MDBC Costs for year t (being year 2008/09) for high security entitlement charge

Assuming that:

- high security entitlement charge for 2008/09 ($P_{2008/09e}$) for the Murray Valley equals $4.70
- the smoothed revenue requirement which the Tribunal forecast would be delivered by the Corporation through charges in Tables 1 and 2 for the Year t-2 (being year 2006/07 ($SRR_{2006/07}$)) equals $11. 641 million as set out in schedule 3
- SWC MDBC Costs allowed by the Tribunal for Year t-2 (being year 2006/07 ($MCA_{2006/07}$)) equals $11.452 million as per table 4 of schedule 1

- SWC MDBC Costs actually paid by the Corporation to the NSW Government for Year t-2 (being year 2006/07 ($MAC_{2006/07}$)) equals $13.000 million

The adjusted high security entitlement charge for the year 2008/09 for the Murray Valley is calculated as follows:

$$P_{2008/09ae} = P_{2008/09e} \times \left(\frac{SRR_{2006/07} - MCA_{2006/07} + MAC_{t-2}}{SRR_{2006/07}} \right)$$

$$P_{2008/09ae} = 4.70 \times \left(\frac{11.641 - 11.452 + 13.000}{11.641} \right)$$

$$P_{2008/09ae} = 5.32$$

Therefore, the adjusted high security entitlement charge for 2008/09 for the Murray Valley is $5.32/ML of Entitlement.

2. Calculation of the annual price adjustment mechanism for SWC MDBC Costs for year t (being year 2008/09) for general security entitlement charge

Assuming that:

- general security entitlement charge for 2008/09 ($P_{2008/09e}$) for the Murray Valley equals $3.40
- the smoothed revenue requirement which the Tribunal forecast would be delivered by the Corporation through charges in Tables 1 and 2 for the Year t-2 (being year 2006/07 ($SRR_{2006/07}$)) equals $11.641 million as set out in schedule 3
- SWC MDBC Costs allowed by the Tribunal for Year t-2 (being year 2006/07 ($MCA_{2006/07}$)) equals $11.452 million as per table 4 of schedule 1,
- SWC MDBC Costs actually paid by the Corporation to the NSW Government for Year t-2 (being year 2006/07 ($MAC_{2006/07}$)) equals $13.000 million.

The adjusted general security entitlement charge for the year 2008/09 for the Murray Valley is calculated as follows:

$$P_{2008/09ae} = P_{2008/09e} \times \left(\frac{SRR_{2006/07} - MCA_{2006/07} + MAC_{t-2}}{SRR_{2006/07}} \right)$$

$$P_{2008/09ae} = 3.40 \times \left(\frac{11.641 - 11.452 + 13.000}{11.641} \right)$$

$$P_{2008/09ae} = 3.85$$

Therefore, the adjusted general security entitlement charge for 2008/09 for the Murray Valley is $3.85/ML of Entitlement.

3. Calculation of the annual price adjustment mechanism for SWC MDBC Costs for year t (being year 2008/09) for usage charge

Assuming that:

- usage charge for 2008/09 ($P_{2008/09u}$) for the Murray Valley equals $4.74
- the smoothed revenue requirement which the Tribunal forecast would be delivered by the Corporation through charges in Tables 1 and 2 for the Year t-2 (being year 2006/07 ($SRR_{2006/07}$)) equals $11.641 million as set out in schedule 3
- SWC MDBC Costs allowed by the Tribunal for Year t-2 2006/07 ($MCA_{2006/07}$) equals $11.452 million as per table 4 of schedule 1
- SWC MDBC Costs actually paid by the Corporation to the NSW Government for Year t-2 (being year 2006/07 ($MAC_{2006/07}$)) equals $13.000 million
- the volume of water assumed by the Tribunal that customers in the Murray Valley for Year t-2 (being year 2006/07 ($UVP_{2006/07}$)) equals 1,9430,830 ML as set out in schedule 3
- the volume of water actually used by customers in the Murray Valley for Year t-2 (year 2006/07 ($UVA_{2006/07}$)) equals 1,740,000 ML.

The adjusted usage charge for the year 2008/09 for the Murray Valley is calculated as follows:

$$P_{2008/09au} = P_{2008/09u} \times \left(\frac{SRR_{2006/07} - MCA_{2006/07} + MAC_{t-2}}{SRR_{2006/07}} \right) \times \left(\frac{UVP_{2006/07}}{UVA_{2006/07}} \right)$$

$$P_{2008/09au} = 4.74 \times \left(\frac{11.641 - 11.452 + 13.000}{11.641} \right) \times \left(\frac{1{,}934{,}830}{1{,}740{,}000} \right)$$

$$P_{2008/09au} = 5.97$$

Therefore, the adjusted usage charge for 2008/09 for the Murray Valley is $5.97/ML.

Schedule 6

Definitions and Interpretation

1. Definitions

1.1 General definitions

In this determination:

Commencement Date is defined in clause (c) of section 2 (**Application of this determination)** of this determination.

Corporation is defined in clause (b) of section 1 (**Background**) of this determination.

Entitlement means the right, conferred by means of a Water Licence, to take and use a specified quantity of water.

Fish River Water Supply Scheme has the meaning given to that term in the SWC Act.

General Security Licence means:

(a) a WMA Licence of any of the following types (within the meaning of section 57 of the Water Management Act and the regulations made under that Act):

(i) supplementary water access licence

(ii) the following conveyance access licences, to the extent that their unit shares of entitlement are designated as general security under the relevant Water Sharing Plan:

(1) regulated river (conveyance) access licence

(2) Murrumbidgee Irrigation (conveyance) access licence

(3) Coleambally Irrigation (conveyance) access licence

(iii) any other access licence that is not a High Security Licence; or

(b) a WA Licence issued by WAMC as a Low Security licence.

High Flow Licence means a WA Licence issued by WAMC as a high flow licence.

High Security Licence means:

(a) a WMA Licence of any of the following types (within the meaning of section 57 of the Water Management Act and the regulations made under that Act):

(i) local water utility access licence;

(ii) major utility access licence;

(iii) domestic and stock access licence;

(iv) regulated river (high security) access licence; or

(b) a WA Licence issued by WAMC as a High Security Licence.

IPART Act is defined in clause (a) of section 1 (**Background**) of this determination.

Irrigation Corporation has the meaning given to that term under the Water Management Act.

Irrigator means a person who irrigates pursuant to a relevant approval, and includes an Irrigation Corporation.

MAQ means the minimum annual quantity for the relevant customer in the Fish River Water Supply Scheme as advised by the Corporation.

MDBC means the Murray Darling Basin Commission.

MDBC Costs means the costs incurred by the MDBC under the Murray Darling Basin Agreement June 1992 (with additions to January 2006).

NSW MDBC Costs means the NSW Government's share of the MDBC Costs in a year.

Minister means the Minister administering the Water Management Act (or, where relevant, the Water Act).

Monopoly Services means the services defined as such in clause (f) of section 1 (**Background**) of this determination.

Murray Valley has the meaning given to the term 'Murray' in clause 2.8 of this schedule.

Regulated River has the meaning given to that term under the Water Management Act.

SWC Act means the *State Water Corporation Act 2004*.

SWC MDBC Costs means so much of the NSW MDBC Costs which the NSW Government requires be borne by the Corporation in a year and recovered by the Corporation through the prices charged for the Corporation's Monopoly Services.

Supplementary Water Access Licence means an access licence that falls within s57(1) of the Water Management Act.

Tribunal means the Independent Pricing and Regulatory Tribunal of New South Wales, established under the IPART Act.

WAMC means the Water Administration Ministerial Corporation, being the corporation established under section 371 of the Water Management Act, and which is a continuation of, and the same legal entity as, the corporation of that name constituted by the *Water Administration Act 1986* (by virtue of clause 17 of Schedule 9 of the Water Management Act).

WMA Licence means an access licence referred to in section 56 of the Water Management Act, of any the following categories (as referred to in section 57 of that Act and the regulations made under that Act):

(a) regulated river (high security) access licence

(b) regulated river (general security) access licence

(c) regulated river (conveyance) access licence

(d) supplementary water access licence

(e) major utility access licence

(f) local water utility access licence

(g) domestic and stock access licence

(h) Murrumbidgee Irrigation (conveyance) access licence

(i) Coleambally Irrigation (conveyance) access licence

(j) floodplain harvesting access licence

(k) any other category of access licence that authorises the extraction of water from a regulated river.

Water Act is defined in clause (g)(2) of section 1 (**Background**) of this determination.

WA Licence means any licence, permit or authority under Part 2 or Part 9 of the Water Act, to the extent that it authorises the extraction of water.

Water Licence means:

(a) a WMA Licence; or

(b) a WA Licence.

Water Management Act is defined in clause (g)(1) of section 1 (**Background**) of this determination.

Water Sharing Plan means the water sharing provisions of a management plan for a water management area or water source under the Water Management Act.

Yanco Columbo System is a regulated stream of the Murrumbidgee river system.

1.2 Consumer Price Index

(a) **CPI** means the consumer price index All Groups index number for the weighted average of eight capital cities, published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by the Tribunal

(b) $$\mathbf{\Delta CPI_1} = \left(\frac{CPI_{Jun2006} + CPI_{Sep2006} + CPI_{Dec2006} + CPI_{Mar2007}}{CPI_{Jun2005} + CPI_{Sep2005} + CPI_{Dec2005} + CPI_{Mar2006}} \right) - 1$$

$$\mathbf{\Delta CPI_2} = \left(\frac{CPI_{Jun2007} + CPI_{Sep2007} + CPI_{Dec2007} + CPI_{Mar2008}}{CPI_{Jun2005} + CPI_{Sep2005} + CPI_{Dec2005} + CPI_{Mar2006}} \right) - 1$$

$$\mathbf{\Delta CPI_3} = \left(\frac{CPI_{Jun2008} + CPI_{Sep2008} + CPI_{Dec2008} + CPI_{Mar2009}}{CPI_{Jun2005} + CPI_{Sep2005} + CPI_{Dec2005} + CPI_{Mar2006}} \right) - 1$$

each as calculated by the Tribunal and notified in writing by the Tribunal to the Corporation.

(c) The subtext (for example $_{\text{Jun 2005}}$) when used in relation to paragraph (b) above means the CPI for the quarter and year indicated (in the example the June quarter for 2005).

2. Interpretation

2.1 General provisions

In this determination:

(a) headings are for convenience only and do not affect the interpretation of this determination;

(b) a reference to a schedule, annexure, clause or table is a reference to a schedule, annexure, clause or table to this determination;

(c) words importing the singular include the plural and vice versa;

(d) a reference to a law or statute includes all amendments or replacements of that law or statute.

2.2 Explanatory notes and clarification notice

(a) Explanatory notes do not form part of this determination, but in the case of uncertainty may be relied on for interpretation purposes.

(b) The Tribunal may publish a clarification notice in the NSW Government Gazette to correct any manifest error in this determination as if that clarification notice, on publication, formed part of this determination.

2.3 Prices exclusive of GST

Prices or charges specified in this determination do not include GST.

2.4 Billing cycle

For the avoidance of doubt nothing in this determination affects when a bill may be issued to a customer for prices or charges under this determination.

2.5 Annual charges

The annual charges in this determination apply to each financial year (1 July to 30 June inclusive).

In respect of:

(a) the period from the Commencement Date until 30 June 2007 (if that period is less than a full financial year); and

(b) any period after 30 June 2007 that is less than a full financial year,

the annual charges in this determination (other than those calculated by reference to usage) will be pro-rated for that period, based on the proportion that the number of days in that period bears to the number of days in the financial year.

2.6 Billing on behalf of WAMC

Nothing in this determination prevents the Corporation from billing on behalf of WAMC for services provided by WAMC.

2.7 Entitlement charges

(a) A reference to an entitlement charge is a reference to an entitlement charge specified in a Water Licence without regard to any part of the Entitlement that may be carried over from a previous year.

(b) A reference to an entitlement charge:

(1) expressed in dollars per megalitre of Entitlement is a reference to a charge expressed in dollars per megalitre of water which a WA Licence or a WMA Licence confers on the licence holder in a year; and

(2) expressed in dollars per unit share is a reference to a charge so expressed under a WMA Licence whose share component is expressed in unit shares.

2.8 Metering of usage charges for Irrigation Corporations

For the avoidance of doubt, the metering of usage charges for the supply of water to an Irrigation Corporation from a Regulated River is to be determined at the point of off -take from the Regulated River.

2.9 Water sources and river valleys

(a) In this determination, a reference to a water source or river valley is a reference to the relevant water source or valley more fully described in the following table:

Water Source or River Valley	Description
Regulated Rivers	
Border	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Border Rivers including the Severn, the Macintyre and Dumaresq rivers down to Mungindi
Gwydir	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Gwydir River and Gwydir Wetlands, Mehi river, Gil Gil Creek and Moomin Creek to the junction with the Barwon River
Namoi	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Namoi River to Peel River and Pian Creek to Barwon River
Peel	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Peel River to junction with Namoi River
Lachlan	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Lachlan and Belubula River to the Murrumbidgee River junction
Macquarie	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Macquarie River, the Cudgegong and Bogen rivers to junction with Darling River
Murray	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Murray River including the Darling River below Menindee
Murrumbidgee	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Murrumbidgee River to junction with Murray River, including Yanco, Colombo and Billabong Creeks and Tumut River
North Coast	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Regulated flows for Iron Pot and Eden Creeks
Hunter	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Hunter River, including Patterson River and Glennies Creek
South Coast	If a water sharing plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Brogo and Bega River Catchments

(b) A reference in this determination to 'the relevant water source or river valley' (other than in the case of the usage component of a licence) is a reference to the water source or river valley for which a Water Licence is issued. In the case of the usage component of a licence, for an inter-valley (water source) transfer of water, the 'relevant water source or river valley' is the water source or river valley from which water is extracted.

Draft Determination No 4, 2006

Section 11(1)

Independent Pricing and Regulatory Tribunal Act 1992

The Water Administration Ministerial Corporation

Independent Pricing and Regulatory Tribunal of New South Wales

Reference No 05/545

1. Background

(a) Section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992 (***IPART Act***)* permits the Tribunal to conduct investigations and make reports to the Minister administering the IPART Act on the determination of the pricing for a government monopoly service supplied by a government agency specified in Schedule 1 of the IPART Act.

(b) The Water Administration Ministerial Corporation (**Corporation**) is listed in Schedule 1 of the IPART Act as a "government agency" for which the Tribunal has a standing reference for the purposes of section 11 of the IPART Act.

(c) The Corporation's functions under the *Water Management Act 2000* (**Water Management Act**) (sections 372 and 373) include:

(1) to construct, maintain and operate water management works;

(2) to conduct research, collect information and develop technology in relation to water management;

(3) to acquire rights to water, whether within or beyond New South Wales;

(4) to do anything for the purpose of enabling the objects of the Water Management Act to be attained; and

(5) to enter into commercial operations with respect to (among other things) any services developed in connection with the exercise of its functions (with the approval of the Governor).

(d) Under clause 3 of the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004,* services supplied by the Corporation which involve:

(1) the making available of water;

(2) the making available of the Corporation's water supply facilities; or

(3) the supplying of water, whether by means of the Corporation's facilities or otherwise,

are "government monopoly services" (**Monopoly Services**) for the purposes of sections 4 and 11(1) of the IPART Act. Accordingly, the Tribunal may conduct investigations and report to the Minister administering the IPART Act on the determination of prices for these Monopoly Services supplied by the Corporation.

(e) Under section 4(6) of the IPART Act, the Corporation is taken to be the supplier of the services for which fees and charges are payable under Chapter 3 of the Water Management Act, and which are declared to be government monopoly services.

(f) In practice, charges for the Corporation's water resource management activities are made as charges under licences, permits, approvals or authorities granted:

(1) by the Minister under Chapter 3 of the Water Management Act (in areas of NSW in which proclamations under sections 55A and 88A of the Water Management Act are in force); and

(2) by the Corporation under the *Water Act 1912* (**Water Act**) (in other areas of NSW).

(g) Accordingly, in determining prices for the Corporation's Monopoly Services, the Tribunal has determined prices payable for these services under various licences, permits, approvals or authorities granted under the Water Management Act and the Water Act.

(h) In investigating and reporting on the pricing of the Corporation's Monopoly Services, the Tribunal has had regard to a broad range of matters, including the criteria set out in section 15(1) of the IPART Act.

(i) In accordance with section 13A(1) of the IPART Act, the Tribunal has fixed the maximum price for the Corporation's Monopoly Services and/or established a methodology for fixing the maximum price.

(j) Under section 18(2) of the IPART Act, the Corporation may not fix a price for Monopoly Services below that determined by the Tribunal without the approval of the Treasurer.

2. Application of this determination

(a) Under section 13A of the IPART Act, this determination fixes the maximum prices (and/or sets a methodology for fixing those maximum prices) that may be charged for the Corporation's Monopoly Services under Water Licences that authorise the extraction of water from:

(1) Regulated Rivers;

(2) Unregulated Rivers; and

(3) Ground Water sources.

(b) No charges may be levied on any person for the Corporation's Monopoly Services other than as provided in this determination.

(c) This determination commences on the later of 1 August 2006 and the date that it is published in the NSW Government Gazette (**Commencement Date**).

(d) The maximum prices in this determination apply from the Commencement Date to 30 June 2010. The maximum prices in this determination prevailing at 30 June 2010 continue to apply beyond 30 June 2010 until this determination is replaced.

3. Replacement of Determination No. 9 of 2005

Determination No. 9 of 2005 (Reference No 04/291), to the extent that it relates to pricing for the Corporation's Monopoly Services, is replaced by this determination from the Commencement Date. The replacement does not affect anything done or omitted to be done, or rights or obligations accrued, under that determination prior to its replacement.

4. Monitoring

The Tribunal may monitor the performance of the Corporation for the purposes of:

(a) establishing and reporting on the level of compliance by the Corporation with this determination; and

(b) preparing a periodic review of pricing policies in respect of the Monopoly Services supplied by the Corporation.

5. Schedules

Schedules 1 - 4 (inclusive) and the Tables in those Schedules set out the maximum prices that the Corporation may charge for the Monopoly Services specified in the Schedules. They operate together with Schedule 5.

6. Definitions and Interpretation

Definitions and interpretation provisions used in this determination are set out in Schedule 6.

Schedule 1

Regulated Rivers

1. Application

This Schedule sets the maximum prices that may be charged for the Corporation's Monopoly Services under a Water Licence that authorises the extraction of water from a Regulated River, for the period to which this determination applies.

2. Maximum charges

2.1. The maximum annual charges that may be levied for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule are the following charges (and no other charges):

(a) an entitlement charge (being a charge expressed in dollars per megalitre of Entitlement or in dollars per unit share) in Table 1 and:

(1) **in the case of a WMA Licence holder:** multiplied by the conversion factor in clause 3 of this Schedule and applied to that licence holder's entitlement for the relevant year and the relevant water source or river valley in that table; and

(2) **in the case of a licence holder specified in Table 3:** discounted by the percentage specified for that licence holder in that table;

(b) a usage charge (being a charge expressed in dollars per megalitre of water actually extracted) in Table 2.

2.2 Despite clause 2.1 of this Schedule, only a usage charge may be levied by the Corporation for:

(a) a High Flow Licence; and

(b) a Supplementary Water Access Licence.

3. Conversion factor

3.1 If a WA Licence is converted to a WMA Licence and that WMA Licence is expressed as a specified number of unit shares then the following conversion factor is to be applied to the entitlement charges ($ per unit share) in Table 1:

$$CF = \frac{A}{B}$$

Where:

CF – conversion factor

A- the volume of water (expressed in megalitres) that the total number of unit shares of that licence represents immediately after that WMA Licence is issued

B – the volume of water (expressed in megalitres) entitlements immediately before that WMA Licence is issued.

3.2 A worked example of the application of this clause is set out in Part 1, Schedule 5.

Note: 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 the conversion factor ensures that the price per ML of water is that determined by the Tribunal. This provides customers with some protection in situations where entitlements volumes have been reduced

Tables 1, 2 and 3

Table 1 Entitlement Charges for Regulated Rivers

Water source/river valley	Commencement Date to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009	1 July 2009 to 30 June 2010
	($/ML of Entitlement or $/unit share)	($/ML of Entitlement or $/unit share)	($/ML of Entitlement or $/unit share)	($/ML of Entitlement or $/unit share)
Border	1.45	1.37 x $(1+\Delta CPI_1)$	1.30 x $(1+\Delta CPI_2)$	1.22 x $(1+\Delta CPI_3)$
Gwydir	0.87	0.79 x $(1+\Delta CPI_1)$	0.72 x $(1+\Delta CPI_2)$	0.66 x $(1+\Delta CPI_3)$
Namoi	1.57	1.37 x $(1+\Delta CPI_1)$	1.19 x $(1+\Delta CPI_2)$	1.04 x $(1+\Delta CPI_3)$
Peel	1.10	1.11 x $(1+\Delta CPI_1)$	1.12 x $(1+\Delta CPI_2)$	1.14 x $(1+\Delta CPI_3)$
Lachlan	0.96	0.92 x $(1+\Delta CPI_1)$	0.89 x $(1+\Delta CPI_2)$	0.85 x $(1+\Delta CPI_3)$
Macquarie	0.75	0.79 x $(1+\Delta CPI_1)$	0.83 x $(1+\Delta CPI_2)$	0.87 x $(1+\Delta CPI_3)$
Murray	1.33	1.37 x $(1+\Delta CPI_1)$	1.40 x $(1+\Delta CPI_2)$	1.44 x $(1+\Delta CPI_3)$
Murrumbidgee	0.97	0.96 x $(1+\Delta CPI_1)$	0.94 x $(1+\Delta CPI_2)$	0.93 x $(1+\Delta CPI_3)$
North Coast	1.91	2.19 x $(1+\Delta CPI_1)$	2.52 x $(1+\Delta CPI_2)$	2.90 x $(1+\Delta CPI_3)$
Hunter	2.01	1.67 x $(1+\Delta CPI_1)$	1.38 x $(1+\Delta CPI_2)$	1.14 x $(1+\Delta CPI_3)$
South Coast	1.89	2.18 x $(1+\Delta CPI_1)$	2.50 x $(1+\Delta CPI_2)$	2.88 x $(1+\Delta CPI_3)$

Table 2 Usage Charges for Regulated Rivers

Water source/river valley	Commencement Date to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009	1 July 2009 to 30 June 2010
	($/ML)	($/ML)	($/ML)	($/ML)
Border	1.69	1.60 x $(1+\Delta CPI_1)$	1.51 x $(1+\Delta CPI_2)$	1.42 x $(1+\Delta CPI_3)$
Gwydir	1.01	0.92 x $(1+\Delta CPI_1)$	0.84 x $(1+\Delta CPI_2)$	0.77 x $(1+\Delta CPI_3)$
Namoi	1.88	1.63 x $(1+\Delta CPI_1)$	1.42 x $(1+\Delta CPI_2)$	1.24 x $(1+\Delta CPI_3)$
Peel	2.00	2.02 x $(1+\Delta CPI_1)$	2.05 x $(1+\Delta CPI_2)$	2.07 x $(1+\Delta CPI_3)$
Lachlan	1.10	1.06 x $(1+\Delta CPI_1)$	1.02 x $(1+\Delta CPI_2)$	0.98 x $(1+\Delta CPI_3)$
Macquarie	1.02	1.07 x $(1+\Delta CPI_1)$	1.12 x $(1+\Delta CPI_2)$	1.18 x $(1+\Delta CPI_3)$
Murray	0.36	0.37 x $(1+\Delta CPI_1)$	0.38 x $(1+\Delta CPI_2)$	0.39 x $(1+\Delta CPI_3)$
Murrumbidgee	0.25	0.25 x $(1+\Delta CPI_1)$	0.24 x $(1+\Delta CPI_2)$	0.24 x $(1+\Delta CPI_3)$
North Coast	1.28	1.47 x $(1+\Delta CPI_1)$	1.69 x $(1+\Delta CPI_2)$	1.95 x $(1+\Delta CPI_3)$
Hunter	2.00	1.66 x $(1+\Delta CPI_1)$	1.37 x $(1+\Delta CPI_2)$	1.13 x $(1+\Delta CPI_3)$
South Coast	1.27	1.46 x $(1+\Delta CPI_1)$	1.67 x $(1+\Delta CPI_2)$	1.93 x $(1+\Delta CPI_3)$

Table 3 Discount on entitlement charges for Regulated Rivers

Licence holder	Commencement Date to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009	1 July 2009 to 30 June 2010
Murray Irrigation Limited	32%	22%	12%	0%
Western Murray Irrigation Limited	20%	13%	7%	0%
West Corurgan	26%	18%	9%	0%
Moira Irrigation Scheme	23%	15%	8%	0%
Eagle Creek Scheme	19%	13%	6%	0%
Murrumbidgee Irrigation Limited	22%	14%	7%	0%
Coleambally Irrigation Limited	24%	16%	8%	0%
Jemalong Irrigation Limited	20%	14%	7%	0%

Schedule 2

Unregulated Rivers

1. Application

This Schedule sets the maximum prices that may be charged for the Corporation's Monopoly Services under a Water Licence that authorises the extraction of water from an Unregulated River, for the period to which this determination applies.

2. Categories for pricing purposes

The charges for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule depend on whether the licence holder is:

(a) an Irrigator or the holder of a Domestic and Stock Licence[1];

(b) Sydney Catchment Authority;

(c) Hunter Water Corporation; or

(d) none of the above.

3. Maximum charges for irrigators or domestic and stock licence holders

The maximum annual charge for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule held by an Irrigator or the holder of a Domestic and Stock Licence is:

(a) **in the case of a licence holder that does not have an Entitlement Volume specified under a WMA Licence or a WA Licence:** an area based charge (being a charge expressed in dollars per hectare of authorised area of irrigation) in Table 4 for the relevant year and relevant water source or river valley;

(b) **in the case of a licence holder in the Far West River Valley who has an Entitlement Volume under a WA licence:** an area based charge (being a charge expressed in dollars per hectare of authorised area of irrigation) in Table 4 for the relevant year and relevant water source or river valley; and

(c) **other than in the cases in paragraphs (a) and (b) above:** volume of entitlement charge (being a charge expressed in dollars per megalitre of Entitlement or in dollars per unit share) in Table 4 (multiplied by the conversion factor in clause 7 of this Schedule corresponding to the relevant water source or river valley, and applied to the licence holder's Entitlement during the relevant year).

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1 Note: Determination No 9 of 2005 (clause 2, schedule 2) enables the Corporation to charge holders of a licence that authorises the extraction of water from an unregulated river. This determination makes explicit that the charge extends to the holders of a Domestic and Stock Licence.

4. Maximum charges for Sydney Catchment Authority

The maximum annual charge for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule held by Sydney Catchment Authority is:

(a) **where the Sydney Catchment Authority has not been allocated an Entitlement Volume:** the charges specified under Table 8 for the relevant year; or

(b) **where the Sydney Catchment Authority has been allocated an Entitlement Volume:**

(i) an entitlement charge (being a charge expressed in dollars per megalitre of water actually extracted) in Table 5 for the relevant year and relevant water source or river valley; and

(ii) a usage charge (being a charge expressed in dollars per megalitre of water actually extracted) in Table 5 for the relevant year and relevant water source or river valley.

5. Maximum charges for Hunter Water Corporation

The maximum annual charge for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule held by Hunter Water Corporation is a usage charge expressed in dollars per megalitre of water actually extracted as set out in Table 8 , applied to the Hunter Water Corporation's usage during the relevant year.

6. Maximum charges for licence holders other than irrigators, domestic and stock licence holders, Sydney Catchment Authority or Hunter Water Corporation

The maximum annual charge for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule held by a licence holder other than an Irrigator, a holder of a Domestic and Stock Licence, Sydney Catchment Authority or Hunter Water Corporation is:

(a) **in the case of a WA Licence where the licence holder has not been allocated an Entitlement Volume:** the following:

(1) the base charge in Table 7 for the relevant year; and

(2) the charge (being a charge expressed in dollars per megalitre of water actually extracted) in Table 6, based on the licence holder's usage during the relevant year and the relevant water source or river valley; or

(b) **other than in the case in paragraph (a) above:** a two part tariff consisting of:

(1) an entitlement charge (being a charge expressed in dollars per megalitre of Entitlement or in dollars per unit share) in Table 5 (multiplied by the conversion factor in clause 7 and applied to the licence holder's entitlement for the relevant water source or river valley for the relevant year); and

(2) a usage charge (being a charge expressed in dollars per megalitre of water actually extracted) in Table 5, based on the licence holder's usage for the relevant year and the relevant water source or river valley.

7. Conversion factor

7.1 If a WA Licence is converted to a WMA Licence and that WMA Licence is expressed as a specified number of unit shares then the following conversion factor is to be applied to the entitlement charges ($ per unit share) in Tables 4 and 5:

$$CF = \frac{A}{B}$$

Where:

CF – conversion factor

A- the volume of water (expressed in megalitres) that the total number of unit shares of that licence represents immediately after that WMA Licence is issued

B – the volume of water (expressed in megalitres) entitlements immediately before that WMA Licence is issued.

7.2 A worked example of the application of this clause is set out in Part 2, Schedule 5.

8. Constraint on annual price increases

8.1 Subject to clause 8.4 of this schedule, the Corporation must ensure that the amount specified in an annual bill issued to a customer under this schedule in a financial year (**Year t**) does not exceed by more than 25% (in real terms) the amount specified in a customer's annual bill for the financial year immediately preceding Year t (**Year t-1**).

8.2 In applying clause 8.1, it is to be assumed that the level of usage in a customer's bill in Year t-1 is the same as the level of usage in Year t.

8.3 In clause 8.1 of this schedule, an amount is in real terms in a year when the amount has been adjusted by dividing that amount by the relevant index in clause 1.2 of Schedule 6 (consumer price index) for that year.

8.4 In applying clause 8.1 of this schedule, any Entitlement (and any usage volumes associated with the Entitlement) acquired by or transferred to the customer after the Commencement Date is to be disregarded. However, clauses 3, 4, 5 or 6 (as the case may be) of this schedule apply to that Entitlement (and any usage volume associated with those Entitlement) in the same way as they apply to other Entitlements.

Tables 4, 5, 6, 7 and 8

Table 4 Charges for unregulated rivers – area based charges and volume of entitlement charges (other than for Sydney Catchment Authority and Hunter Water Corporation)

Region/river valley	Commencement Date to 30 June 2007		1 July 2007 to 30 June 2008		1 July 2008 to 30 June 2009		1 July 2009 to 30 June 2010	
	Area based charge	Volume of entitlement charge 2006/07	Area based charge 2007/08	Volume of entitlement charge 2007/08	Area based charge 2008/09	Volume of entitlement charge 2008/09	Area based charge 2008/09	Volume of entitlement charge 2008/09
	($/ha)	($/ML)	($/ha)	($/ML)	($/ha)	($/ML)	($/ha)	($/ML)
Border	12.26	3.00	12.26	3.00	12.26	3.00	12.26	3.00
Gwydir	12.26	3.00	12.26	3.00	12.26	3.00	12.26	3.00
Namoi	12.26	3.00	12.26	3.00	12.26	3.00	12.26	3.00
Peel	12.26	3.00	12.26	3.00	12.26	3.00	12.26	3.00
Lachlan	14.52	4.07	$15.06 \times (1+\Delta CPI_1)$	$4.22 \times (1+\Delta CPI_1)$	$15.63 \times (1+\Delta CPI_2)$	$4.38 \times (1+\Delta CPI_2)$	$16.22 \times (1+\Delta CPI_3)$	$4.55 \times (1+\Delta CPI_3)$
Macquarie	14.52	4.07	$15.06 \times (1+\Delta CPI_1)$	$4.22 \times (1+\Delta CPI_1)$	$15.63 \times (1+\Delta CPI_2)$	$4.38 \times (1+\Delta CPI_2)$	$16.22 \times (1+\Delta CPI_3)$	$4.55 \times (1+\Delta CPI_3)$
Far West	16.09	3.43	$18.50 \times (1+\Delta CPI_1)$	$3.95 \times (1+\Delta CPI_1)$	$21.27 \times (1+\Delta CPI_2)$	$4.54 \times (1+\Delta CPI_2)$	$24.46 \times (1+\Delta CPI_3)$	$5.22 \times (1+\Delta CPI_3)$
Murray	9.16	3.05	$10.53 \times (1+\Delta CPI_1)$	$3.50 \times (1+\Delta CPI_1)$	$12.11 \times (1+\Delta CPI_2)$	$4.03 \times (1+\Delta CPI_2)$	$13.92 \times (1+\Delta CPI_3)$	$4.63 \times (1+\Delta CPI_3)$
Murrumbidgee	13.57	6.44	13.57	6.44	13.57	6.44	13.57	6.44
North Coast	16.09	4.08	$18.50 \times (1+\Delta CPI_1)$	$4.70 \times (1+\Delta CPI_1)$	$21.27 \times (1+\Delta CPI_2)$	$5.40 \times (1+\Delta CPI_2)$	$24.46 \times (1+\Delta CPI_3)$	$6.21 \times (1+\Delta CPI_3)$
Hunter	13.33	3.14	$14.67 \times (1+\Delta CPI_1)$	$3.46 \times (1+\Delta CPI_1)$	$16.14 \times (1+\Delta CPI_2)$	$3.80 \times (1+\Delta CPI_2)$	$17.76 \times (1+\Delta CPI_3)$	$4.19 \times (1+\Delta CPI_3)$
South Coast	14.36	3.07	$14.75 \times (1+\Delta CPI_1)$	$3.15 \times (1+\Delta CPI_1)$	$15.14 \times (1+\Delta CPI_2)$	$3.24 \times (1+\Delta CPI_2)$	$15.55 \times (1+\Delta CPI_3)$	$3.33 \times (1+\Delta CPI_3)$

Table 5 Charges for unregulated rivers – two part tariff (other than Hunter Water Corporation)

Region/river valley	Commencement Date to 30 June 2007		1 July 2007 to 30 June 2008		1 July 2008 to 30 June 2009		1 July 2009 to 30 June 2010	
	Entitlement ($/ML of Entitlement or $/unit share)	Usage ($/ML)	Entitlement ($/ML of Entitlement or $/unit share)	Usage ($/ML)	Entitlement ($/ML of Entitlement or $/unit share)	Usage ($/ML)	Entitlement ($/ML of Entitlement or $/unit share)	Usage ($/ML)
Border	1.81	1.19	1.81	1.19	1.81	1.19	1.81	1.19
Gwydir	1.81	1.19	1.81	1.19	1.81	1.19	1.81	1.19
Namoi	1.81	1.19	1.81	1.19	1.81	1.19	1.81	1.19
Peel	1.81	1.19	1.81	1.19	1.81	1.19	1.81	1.19
Lachlan	2.45	1.62	2.54 x $(1+\Delta CPI_1)$	1.68 x $(1+\Delta CPI_1)$	2.64 x $(1+\Delta CPI_2)$	1.74 x $(1+\Delta CPI_2)$	2.74 x $(1+\Delta CPI_3$	1.81 x $(1+\Delta CPI_3)$
Macquarie	2.45	1.62	2.54 x $(1+\Delta CPI_1)$	1.68 x $(1+\Delta CPI_1)$	2.64 x $(1+\Delta CPI_2)$	1.74 x $(1+\Delta CPI_2)$	2.74 x $(1+\Delta CPI_3$	1.81 x $(1+\Delta CPI_3)$
Far West	2.09	1.34	2.40 x $(1+\Delta CPI_1)$	1.54 x $(1+\Delta CPI_1)$	2.76 x $(1+\Delta CPI_2)$	1.78 x $(1+\Delta CPI_2)$	3.18 x $(1+\Delta CPI_3$	2.04 x $(1+\Delta CPI_3)$
Murray	1.83	1.22	2.10 x $(1+\Delta CPI_1)$	1.40 x $(1+\Delta CPI_1)$	2.42 x $(1+\Delta CPI_2)$	1.61 x $(1+\Delta CPI_2)$	2.78 x $(1+\Delta CPI_3$	1.85 x $(1+\Delta CPI_3)$
Murrumbidgee	3.86	2.57	3.86	2.57	3.86	2.57	3.86	2.57
North Coast	2.46	1.62	2.83 x $(1+\Delta CPI_1)$	1.87 x $(1+\Delta CPI_1)$	3.26 x $(1+\Delta CPI_2)$	2.15 x $(1+\Delta CPI_2)$	3.74 x $(1+\Delta CPI_3$	2.47 x $(1+\Delta CPI_3)$
Hunter	1.89	1.25	2.08 x $(1+\Delta CPI_1)$	1.38 x $(1+\Delta CPI_1)$	2.29 x $(1+\Delta CPI_2)$	1.52 x $(1+\Delta CPI_2)$	2.52 x $(1+\Delta CPI_3$	1.67 x $(1+\Delta CPI_3)$
South Coast	1.84	1.23	1.89 x $(1+\Delta CPI_1)$	1.26 x $(1+\Delta CPI_1)$	1.94 x $(1+\Delta CPI_2)$	1.30 x $(1+\Delta CPI_2)$	1.99 x $(1+\Delta CPI_3$	1.33 x $(1+\Delta CPI_3)$

Table 6 Charges for unregulated rivers – usage charge only (other than Sydney Catchment Authority and Hunter Water Corporation)

Region/river valley	Commencement Date to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009	1 July 2009 to 30 June 2010
	($/ML)	($/ML)	($/ML)	($/ML)
Border	1.72	1.72	1.72	1.72
Gwydir	1.72	1.72	1.72	1.72
Namoi	1.72	1.72	1.72	1.72
Peel	1.72	1.72	1.72	1.72
Lachlan	2.01	2.08 x $(1+\Delta CPI_1)$	2.16 x $(1+\Delta CPI_2)$	2.24 x $(1+\Delta CPI_3)$
Macquarie	2.01	2.08 x $(1+\Delta CPI_1)$	2.16 x $(1+\Delta CPI_2)$	2.24 x $(1+\Delta CPI_3)$
Far West	2.23	2.56 x $(1+\Delta CPI_1)$	2.94 x $(1+\Delta CPI_2)$	3.38 x $(1+\Delta CPI_3$
Murray	1.15	1.32 x $(1+\Delta CPI_1)$	1.52 x $(1+\Delta CPI_2)$	1.74 x $(1+\Delta CPI_3)$
Murrumbidgee	1.88	1.88	1.88	1.88
North Coast	2.23	2.56 x $(1+\Delta CPI_1)$	2.94 x $(1+\Delta CPI_2)$	3.38 x $(1+\Delta CPI_3)$
Hunter	1.85	2.04 x $(1+\Delta CPI_1)$	2.24 x $(1+\Delta CPI_2)$	2.46 x $(1+\Delta CPI_3)$
South Coast	1.99	2.04 x $(1+\Delta CPI_1)$	2.09 x $(1+\Delta CPI_2)$	2.15 x $(1+\Delta CPI_3)$

Table 7 Base charges

Charge	Commencement Date to 30 June 2007 ($)	1 July 2007 to 30 June 2008 ($)	1 July 2008 to 30 June 2009 ($)	1 July 2009 to 30 June 2010 ($)
Base charge per licence	122.94	122.94 x $(1+\Delta CPI_1)$	122.94 x $(1+\Delta CPI_2)$	122.94 x $(1+\Delta CPI_3)$

Table 8 Charges for unregulated rivers (Sydney Catchment Authority and Hunter Water Corporation)

Authority	Maximum annual charges ($/ML of usage)
Sydney Catchment Authority	The charge derived by adding the entitlement and the usage portions of the two-part tariff for the South Coast in Table 5 (as modified by clause 7, if applicable).
Hunter Water Corporation	The charge derived by adding the entitlement and usage portions of the two-part tariff for the Hunter in Table 5 (as modified by clause 7, if applicable).

Note: For example, under Table 8 the charge derived by adding the entitlement ($1.84 /ML or unit share) and the usage ($1.23/ML) components of the two-part tariff for the South Coast in Table 5 is $3.07/ML

Note: For example, under Table 8 the charge derived by adding the entitlement (1.89/ML or unit share) and the usage ($1.25/ML) portions of the two-part tariff for the Hunter in Table 5 is $3.14/ML.

Schedule 3

Ground Water

1. Application

This Schedule sets the maximum prices that may be charged for the Corporation's Monopoly Services under a Water Licence that authorises the extraction of Ground Water, for the period to which this determination applies.

2. Categories for pricing purposes

The charges for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule depend on whether or not:

(a) the property to which the licence applies is in a monitored Ground Water Management Area; and

(b) the licence holder is Hunter Water Corporation.

3. Maximum charges for properties in monitored Ground Water Management Areas (other than for Hunter Water Corporation)

The maximum annual charges that may be levied for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule where the property identified in the licence is in a monitored Ground Water Management Area (other than where the licence holder is the Hunter Water Corporation) are the following charges (and no other charges):

(a) an entitlement charge (being a charge expressed in dollars per megalitre of Entitlement or in dollars per unit share) in Table 9 (multiplied by the conversion factor in clause 6 this Schedule and applied to the licence holder's entitlement for the relevant year and the relevant water source or river valley in the table);

(b) a usage charge (being a charge expressed in dollars per megalitre of water actually extracted) in Table 10 for the relevant year and the relevant water source or river valley in the table;

(c) a base charge (being a charge expressed in dollars per property to which the licence applies) (as defined by the Corporation) in Table 11 for the relevant year and the "monitored" category in the table.

4. Maximum charges for properties not in monitored Ground Water Management Areas (other than for Hunter Water Corporation)

The maximum annual charges that may be levied for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule where the property identified in the licence is not in a monitored Ground Water Management Area (other than where the licence holder is Hunter Water Corporation), are the following charges (and no other charges):

(a) an entitlement charge (being a charge expressed in dollars per megalitre of Entitlement or in dollars per unit share) in Table 9 (multiplied by the conversion factor in clause 6 of

this Schedule and applied to the licence holder's entitlement for the relevant year and the relevant water source or river valley in the table); and

(b) a base charge (being a charge expressed in dollars per property to which the licence applies (as defined by the Corporation) in Table 11 for the relevant year and the "other than monitored" category in the table.

5. Maximum charges for Hunter Water Corporation

The maximum annual charge that may be levied for the Corporation's Monopoly Services under a licence referred to in clause 1 of this Schedule held by Hunter Water Corporation is the usage charge (and no other charge) expressed in dollars per megalitre of water actually extracted in Table 12, applied to the licence holder's usage during the relevant year.

6. Conversion ratio

6.1 If a Water Sharing Plan (first introduced after the Commencement Date) reduces the total volume of Entitlement (expressed in unit shares) to Ground Water source, the following conversion ratio is to be applied to the entitlement charges in Table 9:

$$CR = \frac{(E \quad x \quad F)}{G}$$

Where:

CR – conversion ratio for a relevant water source or river valley

E - total Entitlement Volume (expressed in megalitres) of all Licence holders in a relevant water source or river valley immediately before the introduction of the Water Sharing Plan

F – megalitre per unit share in a relevant water source or river valley

G - total Entitlement Volume (expressed in megalitres) of all WMA Licence holders in a relevant water source or river valley immediately after the introduction of the Water Sharing Plan (including Entitlement Volumes on any supplementary licences for extraction of Ground Water)

Note: Unlike the conversion factors for surface water, the purpose of the Ground Water conversion ratio is to maintain the Corporation's revenue. The Tribunal understands that introduction of the WSP's is not expected to significantly affect usage volumes and has taken into consideration the low overall level of cost recovery. Please refer to the report accompanying this determination.

6.2 A worked example of the application of this clause is set out in Part 3, Schedule 5.

7. Constraint on annual price increases

7.1 Subject to clause 7.4 of this schedule, the Corporation must ensure that the amount specified in an annual bill issued to a customer under this schedule in a financial year

(**Year t**) does not exceed by more than 25% (in real terms)the amount specified in a customer's annual bill for the financial year immediately preceding Year t (**Year t-1**).

7.2 In applying clause 7.1 of this schedule it is to be assumed that the level of usage in a customer's bill in Year t-1is the same as the level of usage in Year t.

7.3 In clause 7.1 of this schedule, an amount is in real terms in a year when the amount has been adjusted by dividing that amount by the relevant index in clause 1.2 of Schedule 6 (consumer price index) for that year.

7.4 In applying clause 7.1 of this schedule, any Entitlement (and any usage volumes associated with the Entitlement) acquired by or transferred to the customer after the Commencement Date is to be disregarded. However, clauses 3, 4 or 5 (as the case may be) of this schedule apply to that Entitlement (and any usage volume associated with those Entitlement) in the same way as they apply to other Entitlements.

Tables 9, 10, 11 and 12

Table 9 Entitlement charges for Ground Water (other than for Hunter Water Corporation)

Region/river valley	Commencement Date to 30 June 2007 ($/ML of Entitlement or $/unit share)	1 July 2007 to 30 June 2008 ($/ML of Entitlement or $/unit share	1 July 2008 to 30 June 2009 ($/ML of entitlement or $/unit share	1 July 2009 to 30 June 2010 ($/ML of entitlement or $/unit share
Border	1.12	1.43 x (1+ΔCPI_1)	1.78 x (1+ΔCPI_2)	2.18 x (1+ΔCPI_3)
Gwydir	1.12	1.43 x (1+ΔCPI_1)	1.78 x (1+ΔCPI_2)	2.18 x (1+ΔCPI_3)
Namoi	1.12	1.43 x (1+ΔCPI_1)	1.78 x (1+ΔCPI_2)	2.18 x (1+ΔCPI_3)
Peel	1.12	1.43 x (1+ΔCPI_1)	1.78 x (1+ΔCPI_2)	2.18 x (1+ΔCPI_3)
Lachlan	1.72	2.09 x (1+ΔCPI_1)	2.50 x (1+ΔCPI_2)	2.94 x (1+ΔCPI_3)
Macquarie	1.72	2.09 x (1+ΔCPI_1)	2.50 x (1+ΔCPI_2)	2.94 x (1+ΔCPI_3)
Far West	2.03	2.66 x (1+ΔCPI_1)	3.40 x (1+ΔCPI_2)	4.27 x (1+ΔCPI_3)
Murray	1.48	1.56 x (1+ΔCPI_1)	1.64 x (1+ΔCPI_2)	1.72 x (1+ΔCPI_3)
Murrumbidgee	0.99	1.13 x (1+ΔCPI_1)	1.27 x (1+ΔCPI_2)	1.41 x (1+ΔCPI_3)
North Coast	2.03	2.66 x (1+ΔCPI_1)	3.40 x (1+ΔCPI_2)	4.27 x (1+ΔCPI_3)
Hunter	2.03	2.66 x (1+ΔCPI_1)	3.40 x (1+ΔCPI_2)	4.27 x (1+ΔCPI_3)
South Coast	2.03	2.66 x (1+ΔCPI_1)	3.40 x (1+ΔCPI_2)	4.27 x (1+ΔCPI_3)

Table 10 Usage Charges for Ground Water (other than for Hunter Water Corporation)

Region/river valley	Commencement Date to 30 June 2007 ($/ML)	1 July 2007 to 30 June 2008 ($/ML)	1 July 2008 to 30 June 2009 ($/ML)	1 July 2009 to 30 June 2010 ($/ML)
Border	0.56	0.71 x (1+ΔCPI_1)	0.89 x (1+ΔCPI_2)	1.09 x (1+ΔCPI_3)
Gwydir	0.56	0.71 x (1+ΔCPI_1)	0.89 x (1+ΔCPI_2)	1.09 x (1+ΔCPI_3)
Namoi	0.56	0.71 x (1+ΔCPI_1)	0.89 x (1+ΔCPI_2)	1.09 x (1+ΔCPI_3)
Peel	0.56	0.71 x (1+ΔCPI_1)	0.89 x (1+ΔCPI_2)	1.09 x (1+ΔCPI_3)
Lachlan	0.89	1.08 x (1+ΔCPI_1)	1.29 x (1+ΔCPI_2)	1.52 x (1+ΔCPI_3)
Macquarie	0.89	1.08 x (1+ΔCPI_1)	1.29 x (1+ΔCPI_2)	1.52 x (1+ΔCPI_3)
Far West	1.02	1.33 x (1+ΔCPI_1)	1.70 x (1+ΔCPI_2)	2.14 x (1+ΔCPI_3)
Murray	0.75	0.79 x (1+ΔCPI_1)	0.83 x (1+ΔCPI_2)	0.87 x (1+ΔCPI_3)
Murrumbidgee	0.49	0.56 x (1+ΔCPI_1)	0.63 x (1+ΔCPI_2)	0.70 x (1+ΔCPI_3)
North Coast	1.02	1.33 x (1+ΔCPI_1)	1.70 x (1+ΔCPI_2)	2.14 x (1+ΔCPI_3)
Hunter	1.02	1.33 x (1+ΔCPI_1)	1.70 x (1+ΔCPI_2)	2.14 x (1+ΔCPI_3)
South Coast	1.02	1.33 x (1+ΔCPI_1)	1.70 x (1+ΔCPI_2)	2.14 x (1+ΔCPI_3)

Table 11 Base charges

Charge	Commencement Date to 30 June 2007 ($)	1 July 2007 to 30 June 2008 ($)	1 July 2008 to 30 June 2009 ($)	1 July 2009 to 30 June 2010 ($)
Base charge per property in monitored groundwater management areas	156.77	114.44 x $(1+\Delta CPI_1)$	62.94 x $(1+\Delta CPI_2)$	0
Base charge per property in areas other than monitored groundwater management areas	68.04	49.67 x $(1+\Delta CPI_1)$	27.32 x $(1+\Delta CPI_2)$	0

Table 12 Ground Water charges for Hunter Water Corporation

Maximum annual charges ($/ML of usage)
The usage charge derived by adding the entitlement and the usage portions of the two-part tariff for the Hunter in Tables 9 and 10 (as modified by clause 6, if applicable).

Note: For example, the charge derived by adding the entitlement ($2.03/ML) and the usage ($1.02/ML) portions of the two-part tariff for the Hunter in Tables 9 and 10 is $3.05/ML.

Schedule 4

Administration fees and charges

1. Application

This Schedule sets the maximum transaction fees and charges that may be charged with respect to the administration of applications, renewals, permanent transfers and temporary transfers of Water Licences administered by the Corporation under the Water Management Act for the period to which this determination applies.

Note: although the Corporation contracts to State Water Corporation the function of processing temporary licence transfer transactions on behalf of the Corporation, this determination sets the maximum fees for those services.

2. Maximum fees and charges

The maximum fees and charges for the licence transactions described in clause 1 of this Schedule are:

(a) **from the Commencement Date to 30 June 2007** - set out in Table 13 of this Determination;

(b) **from 1 July 2007 to 30 June 2008** -set out in Table 13 of this Determination multiplied by $(1+\Delta CPI_1)$;

(c) **from 1 July 2008 to 30 June 2009** -set out in Table 13 of this Determination multiplied by $(1+\Delta CPI_2)$;

(d) **from 1 July 2009 to 30 June 2010** -set out in Table 13 of this Determination multiplied by $(1+\Delta CPI_3)$.

3. Temporary transfer fee

The maximum fee that may be levied by the Corporation for a temporary transfer of water is:

(a) **from the Commencement Date to 30 June 2007** - $25 plus $1 for each megalitre of water transferred, but in no case is the total to exceed $275;

(b) **from 1 July 2007 to 30 June 2008** - $25 multiplied by $(1+\Delta CPI_1)$ plus $1 multiplied by $(1+\Delta CPI_1)$ for each megalitre of water transferred, but in no case is the total to exceed $275 multiplied by $(1+\Delta CPI_1)$;

(c) **from 1 July 2008 to 30 June 2009** - $25 multiplied by $(1+\Delta CPI_2)$ plus $1 multiplied by $(1+\Delta CPI_2)$ for each megalitre of water transferred, but in no case is the total to exceed $275 multiplied by $(1+\Delta CPI_2)$;

(d) **from 1 July 2009 to 30 June 2010** - $25 multiplied by $(1+\Delta CPI_3)$ plus $1 multiplied by $(1+\Delta CPI_3)$ for each megalitre of water transferred, but in no case is the total to exceed $275 multiplied by$(1+\Delta CPI_3)$.

Table 13 Administration fees and charges

	Commence-ment Date to 30 June 2007 Administration Labour ($)	Commence-ment Date to 30 June 2007 Advertising Costs ($)	Commence-ment Date to 30 June 2007 Basic Assessment ($)	Commence-ment Date to 30 June 2007 Special Assessment $ per unit Entitlement > 20 Unit Entitlements	Commence-ment Date to 30 June 2007 Special Assessment $L/s for pumps > 50 L/s capacity	Commence-ment Date to 30 June 2007 Special Assessment $ per Ha > 10 Hectares	Commence-ment Date to 30 June 2007 Special Assessment Dams ($)	Commence-ment Date to 30 June 2007 Special Assessment Approval Extensions ($)
New water access licences								
Zero Share	105.69							
Specific Purpose	105.69		335.77					
Water access licence dealings								
Dealings - regulated rivers	105.69							
Dealings - unregulated rivers and groundwater	105.69		335.77	15.45				
New or amended approvals								
Works only (No Dam , Pump ≤ 50 Litres/sec)	105.69	480.76	335.77					
Works only (No Dam , Pump > 50 Litres/sec)	105.69	480.76	335.77		2.63			
Works only (Dam)	105.69	480.76	335.77			8.00		
Works only Dam & Pump > 50 Litres/sec	105.69	480.76	335.77				409.53	
Use Only ≤ 10 ha	105.69	480.76	335.77					
Use Only > 10 ha	105.69	480.76	335.77			8.00		
Works and use	105.69	480.76	335.77		2.63	8.00	409.53	
Approval extensions								
admin only	105.69							
Assessment	105.69		335.77					409.53
Basic rights work approval	105.69		-					

Schedule 5

Worked examples

Part 1 – clause 3 Schedule 1

Assuming that:

- volume of water that the total number of unit shares represents immediately after that WMA Licence is issued – 800ML (A)
- volume of water entitlements immediately before that WMA Licence is issued – 1,000 ML (B)

The following conversion factor is to be applied to the entitlement charge in table 1:

$$CF = \frac{A}{B}$$

$$CF = \frac{800ML}{1000ML}$$

$$CF = 0.8$$

Part 2 – clause 7 Schedule 2

Assuming that:

- volume of water that the total number of unit shares represents immediately after that WMA Licence is issued – 800ML (A)
- volume of water entitlements immediately before that WMA Licence is issued – 1,000ML (B)

The following conversion factor is to be applied to the entitlement charge in tables 4 and 5:

$$CF = \frac{A}{B}$$

$$CF = \frac{800ML}{1000ML}$$

$$CF = 0.8$$

Part 3 – clause 6 Schedule 3

Assuming that:

- total Entitlement Volume (expressed in megalitres) of all Licence holders in a relevant water source or river valley immediately before the introduction of the Water Sharing Plan - 150,000ML (E)
- total Entitlement Volume (expressed in megalitres) of all WMA Licence holders in a relevant water source or river valley immediately after the introduction of the Water Sharing Plan (including Entitlement Volumes on any supplementary licences for extraction of Ground Water) - 100,000ML (G)
- megalitre per unit share in a relevant water source or river valley – 0.5ML/unit (F)

$$CR = \frac{(E \quad x \quad F)}{G}$$

$$CR = \frac{(150{,}000\ ML \quad x \quad 0.5\ ML/unit)}{100{,}000\ ML}$$

$$CR = 0.75$$

Schedule 6

Definitions and Interpretation

1. Definitions

In this determination:

Commencement Date is defined in clause (c) of section 2 **(Application of this determination)** of this determination.

Corporation means the Water Administration Ministerial Corporation, being the corporation established under section 371 of the Water Management Act, and which is a continuation of, and the same legal entity as, the corporation of that name constituted by the *Water Administration Act 1986* (by virtue of clause 17 of Schedule 9 of the Water Management Act).

Domestic and Stock Licence means an access licence that falls within s57(1)(k) of the Water Management Act or an access licence expressly issued under the Water Act for a "domestic" or "stock" purpose.

Entitlement means the right, conferred by means of a Water Licence, to take and use a specified quantity of water.

Entitlement Volume means the volume of water attaching to an Entitlement in a WMA Licence or WM Licence.

Ground Water means water accessed from an aquifer or other below-ground water source.

Ground Water Management Area means an area which the Minister has designated as a ground water management area, and for which the Minister has a current management plan in place.

High Flow Licence means a WMA Licence issued by the Corporation as a high flow licence.

IPART Act is defined in clause (a) of section 1 (**Background**) of this determination.

Irrigation Corporation has the meaning given to that term under the Water Management Act.

Irrigator means a person who irrigates under a relevant approval, and includes an Irrigation Corporation.

Minister means the Minister administering the Water Management Act (or, where relevant, the Water Act).

Monopoly Services means the services defined as such in clause (d) of section 1 **(Background)** of this determination.

Regulated River has the meaning given to that term under the Water Management Act.

Supplementary Water Access Licence means an access licence that falls within s57(1) (h) of the Water Management Act.

Tribunal means the Independent Pricing and Regulatory Tribunal of New South Wales, established under the IPART Act.

Unregulated River has the meaning given to that term under the Water Management Act.

WA Licence means any licence, permit or authority under Part 2 or Part 9 of the Water Act, to the extent that it authorises the extraction of water.

WMA Licence means an access licence referred to in section 57 of the Water Management Act.

Water Act is defined in clause (f)(2) of section 1 (**Background**) of this determination.

Water Licence means:

(a) a WMA Licence; or

(b) a WA Licence.

Water Management Act is defined in clause (c) of section 1 (**Background**) of this determination.

Water Sharing Plan means the water sharing provisions of a management plan for a water management area or water source under the Water Management Act.

1.2 Consumer Price Index

(a) **CPI** means the consumer price index All Groups index number for the weighted average of eight capital cities, published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by the Tribunal

(b) $$\mathbf{\Delta CPI_1} = \left(\frac{CPI_{Jun2006} + CPI_{Sep2006} + CPI_{Dec2006} + CPI_{Mar2007}}{CPI_{Jun2005} + CPI_{Sep2005} + CPI_{Dec2005} + CPI_{Mar2006}} \right) - 1$$

$$\mathbf{\Delta CPI_2} = \left(\frac{CPI_{Jun2007} + CPI_{Sep2007} + CPI_{Dec2007} + CPI_{Mar2008}}{CPI_{Jun2005} + CPI_{Sep2005} + CPI_{Dec2005} + CPI_{Mar2006}} \right) - 1$$

$$\mathbf{\Delta CPI_3} = \left(\frac{CPI_{Jun2008} + CPI_{Sep2008} + CPI_{Dec2008} + CPI_{Mar2009}}{CPI_{Jun2005} + CPI_{Sep2005} + CPI_{Dec2005} + CPI_{Mar2006}} \right) - 1$$

each as calculated by the Tribunal and notified in writing by the Tribunal to the Corporation.

(c) The subtext (for example $_{\text{Jun 2005}}$) when used in relation to paragraph (b) above means the CPI for the quarter and year indicated (in the example the June quarter for 2005).

2. Interpretation

2.1 General provisions

In this determination:

(a) headings are for convenience only and do not affect the interpretation of this determination;

(b) a reference to a schedule, annexure, clause or table is a reference to a schedule, annexure, clause or table to this determination;

(c) words importing the singular include the plural and vice versa;

(d) a reference to a law or statute includes all amendments or replacements of that law or statute.

2.2 Explanatory notes and clarification notice

(a) Explanatory notes do not form part of this determination, but in the case of uncertainty may be relied on for interpretation purposes.

(b) The Tribunal may publish a clarification notice in the NSW Government Gazette to correct any manifest error in this determination as if that clarification notice, on publication, formed part of this determination.

2.3 Prices exclusive of GST

Prices or charges specified in this determination do not include GST.

2.4 Billing cycle

For the avoidance of doubt nothing in this determination affects when a bill may be issued to a customer for prices or charges under this determination.

2.5 Annual charges

(a) The annual charges in this determination apply to each financial year (1 July to 30 June inclusive) or part of a financial year from the Commencement Date and to 30 June 2010 or the date that this determination is replaced (if this determination applies beyond 30 June 2010).

(b) In respect of :

(1) the period from the Commencement Date until 30 June 2007 (if that period is less than a full financial year); and

(2) any period after 30 June 2007 that is less than a full financial year,

the annual charges in this determination (other than those calculated by reference to usage) will be pro-rated for that period, based on the proportion that the number of days in that period bears to the number of days in the financial year.

2.6 Entitlement charges

(a) A reference to an entitlement charge is a reference to an entitlement charge specified in a Water Licence without regard to any part of the Entitlement that may be carried over from a previous year.

(b) A reference to an entitlement charge:

(1) expressed in dollars per megalitre of Entitlement is a reference to a charge expressed in dollars per megalitre for which a WA Licence or a WMA Licence confers on the licence holder in a year; and

(2) expressed in dollars per unit share is a reference to a charge so expressed under a WMA Licence whose share component is expressed in unit shares.

2.7 Metering of usage charges for Irrigation Corporations

For the avoidance of doubt, the metering of usage charges for the supply of water to an Irrigation Corporation from a Regulated River is to be determined at the point of off -take from the Regulated River.

2.8 Water sources and river valleys

(a) In this determination, a reference to a water source or river valley is a reference to the relevant water source or valley more fully described in the following table:

Water Source or River Valley	**Description**
Regulated Rivers	
Border	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Border Rivers including the Severn, the Macintyre and Dumaresq rivers down to Mungindi
Gwydir	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Gwydir River and Gwydir Wetlands, Mehi river, Gil Gil Creek and Moomin Creek to the junction with the Barwon River
Namoi	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Namoi River to Peel River and Pian Creek to Barwon River
Peel	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Peel River to junction with Namoi River
Lachlan	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Lachlan and Belubula River to the Murrumbidgee River junction

Macquarie	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Macquarie River, the Cudgegong and Bogen rivers to junction with Darling River
Murray	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Murray River including the Darling River below Menindee
Murrumbidgee	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Murrumbidgee River to junction with Murray River, including Yanco, Colombo and Billabong Creeks and Tumut River
North Coast	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Regulated flows for Iron Pot and Eden Creeks
Hunter	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Hunter River, including Patterson River and Glennies Creek
South Coast	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Brogo and Bega River Catchments
Unregulated Rivers	
Border	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Unregulated rivers in the Border Rivers Catchment
Gwydir	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Unregulated rivers in the Gwydir River Catchment
Namoi	Unregulated rivers in the Namoi River Catchment
Peel	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Unregulated rivers in the Peel River Catchment
Lachlan	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Unregulated rivers in the Lachlan River Catchment
Macquarie	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Unregulated rivers in the Macquarie, Castlereagh and Bogan River Catchments
Far West	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Barwon-Darling from Mungindi to Menindee including Bogan River below Murrawombie Road, and those rivers west of Barwon-Darling River which originate in Queensland and minor unregulated rivers in the Western Division not in other valleys
Murray	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Unregulated rivers in the Murray River Catchment, including Billabong Creek
Murrumbidgee	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan.

	In any other case: Unregulated rivers in the Murrumbidgee River Catchment
North Coast	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Unregulated rivers east of the Great Dividing Range from Queensland to the Hastings River Catchment
Hunter	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Unregulated rivers in the Hunter Region, including the Manning, Karuah and Williams Rivers
South Coast	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Shoalhaven, Woronora, Warragamba and Hawkesbury/Nepean River Catchments, River Lake Illawarra, Sydney City including Georges River and Port Jackson, Clyde, Moruya, Tuross, Towamba and Bega River Catchments, NSW portions of Genoa and Snowy River Catchments
Ground water	
Border	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Largely riverine aquifers in the Border Rivers Catchments including the Border Rivers Alluvium, the Inverell Basalt and the Great Artesian Basin
Gwydir	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Largely riverine aquifers in the Gwydir River Catchment including the Lower Gwydir Alluvium and the Great Artesian Basin
Namoi	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Largely riverine aquifers in the Namoi River Catchment including the Upper and Lower Namoi Alluvium, the Great Artesian Basin and the Gunnedah Basin
Peel	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Largely riverine aquifers in the Peel River Catchment including the Peel Valley Alluvium and Fractured Rock
Lachlan	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Largely riverine aquifers in the Lachlan River Catchment including the Upper and Lower Lachlan Alluvium, Belubula Valley Alluvium, the Great Artesian Basin, Young Granite, Orange Basalt and the Central West Fractured Rocks
Macquarie	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Largely riverine aquifers in the Macquarie, Castlereagh and Bogan River Catchments including the Upper and Lower Macquarie Alluvium, the Cudgegon Valley Alluvium, the Collaburrangundry Talbragar Valley, the Great Artesian Basin, Mudgee and Molong Limestone
Far West	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: The Great Artesian Basin Aquifer and minor aquifers in the Western Division
Murray	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Aquifers in the Murray River Catchment

Murrumbidgee	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Aquifers in the Murrumbidgee River Catchment including the Lower Murrumbidgee Alluvium, Mid Murrumbidgee Alluvium and the Billabong Creek Alluvium
North Coast	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Aquifers east of the Great Dividing Range from Queensland to the Hastings River Catchment including the Richmond River Alluvium, Richmond Coastal Sandbeds, Coffs Harbour Coastal Sands and Alluvium, Alstonville Basalt, Dorrigo Basalt, Clarence Moreton Basin, Hastings Coastal Sands, Hastings River Alluvium, Macleay River Alluvium, Bellinger Coastal Sandbeds and Viney Creek Alluvium
Hunter	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Aquifers in the Hunter Region, including the Manning and Karuah River Catchments including Tomago-Tomaree Sandbeds, Stuarts Points and Tributaries Alluvium, the Pages River Alluvium, Golburn River Alluvium, Mangrove Mountain Sandstone and Wollombi Brook Alluvium
South Coast	If a Water Sharing Plan under the Water Management Act is in place, then the water sources as defined in that plan. In any other case: Aquifers east of the Great Dividing Range from the NSW central coast to Victoria including Botany Sandbeds, Bega River Alluvium, Sydney Basin, Coxs River Sandstone and Fractured Rock, Blue Mountains Richmond Sandstone, Araluen Alluvium and Maroota Tertiary Sands

(b) A reference in this determination to 'the relevant water source or river valley' (other than in the case of the usage component of a licence) is a reference to the water source or river valley for which a Water Licence is issued. In the case of the usage component of a licence, for an inter-valley (water source) transfer of water, the 'relevant water source or river valley' is the water source or river valley from which water is extracted.

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

From 1 August 2006 to 30 June 2010

Draft Report Nos 3 and 4, 2006

May 2006

ISBN 1 920987 67 3

The Tribunal members for this review are:

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REQUEST FOR SUBMISSIONS

The Tribunal invites interested parties to comment on the draft report and determination. Submissions are due by close of business **Wednesday 21 June 2006**. Following consideration of submissions, the Tribunal expects to issue a final determination in July 2006.

Unless confidentiality is sought, the submissions are generally available for public inspection at the Tribunal's offices and will be available on-line in PDF format from the time of processing of the submission until three to four weeks after the release of the final report of an inquiry.

The Tribunal exercises its discretion not to exhibit any submissions based on their length or content (containing material that is defamatory, offensive, or in breach of any law).

Submissions must be made in writing and should be sent to the postal address, fax number or email address below. Electronic submissions in the form of Microsoft Word or Acrobat pdf documents are preferable and are to be sent to the email address below.

Submissions should be sent to:

Email:	ipart@ipart.nsw.gov.au
Postal address	**Review of Bulk Water Agency Prices** Independent Pricing and Regulatory Tribunal PO Box Q290 QVB Post Office NSW 1230
Fax	(02) 9290 2061

Submissions will be treated consistent with the *Privacy and Personal Information Act 1998*.

Confidentiality

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

Privacy

All submissions will be treated in accordance with the Privacy and Personal Information Act 1998. Any personal information you give us will not be reused for another purpose.

Public information about the Tribunal's activities

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

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1 INTRODUCTION 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 and the Dumaresq-Barwon Border River Commission
- 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 has completed the first stage of this 2006 review and has made its draft determination on the price of bulk water services for the period 2006/07 to 2009/10.

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1 In the past the Water Administration Ministerial Corporation (WAMC) was the legal entity that has made available and provided bulk water. WAMC is now administered by DNR. DNR undertakes the water resource management involved in making available and providing bulk water on its behalf. However, these activities continue to fall under the responsibility of this legal entity. 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.

1.1 Drivers of Tribunal's draft 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 draft determination for each agency, the Tribunal was strongly influenced by four significant issues that impact the regulation and prices of bulk water services in NSW. These issues include:

- **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 50 per cent of its revenue from usage charges from 1 July 2006 and then 60 per cent from 1 July 2008. This requirement has driven significant changes in the structure of bulk water prices.
- **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.

Together, these issues have driven the Tribunal's draft 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 Overview of the draft determination

The Tribunal's draft determination continues to move prices towards cost reflective levels, 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 the state'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 draft findings and decisions in relation to the regulatory approach and price structure are to:

- Increase State Water's prices annually by an average of 5.5 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.
- Fund 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 in all valleys as required in State Water's Operating Licence.
- Maintain a two-tier entitlement charge, with a premium for holders of high security licences.
- Provide an annual rebate to large irrigation companies and districts to reflect the lower cost of delivering water to these customers, and the system-wide benefits that some of their activities provide.

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

- Increase DNR's prices annually by an average of 4.5 per cent above inflation over the 2006 determination period. Regulated river prices will increase annually on average by 0.7 per cent above inflation, unregulated river prices by 5.1 per cent and groundwater prices by 11.7 per cent.
- Set prices for regulated and unregulated activities, such that the bill for a customer who extracts water at the average valley rate (relative to their licensed entitlement) will increase, on average, by no more than 15 per cent per annum in real terms over the 2006 determination period. For unregulated rivers and ground water, no bill will increase by more than 25 per cent per year in real terms.
- 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.
- 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**.**

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

In terms of customer impacts, the Tribunal's analysis shows that its draft determination will mean that the maximum annual increase in a customer's bill[4] may be greater than 15 per cent

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

for regulated rivers but will be no greater than 25 per cent for unregulated rivers and groundwater.

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.

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 significant impact on users. In these cases the Tribunal has decided to limit increases.

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. In the case of groundwater services, only two valleys will achieve full cost recovery by the end of the period.

In terms of agency impacts, the Tribunal's analysis indicates that its draft 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. The Tribunal has determined what it considers to be the efficient level of operating and capital expenditure for State Water and DNR.

In relation to State Water:

- the net effect of the Tribunal's draft 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 $191.6 million (see Table 6.2). This amount is $1.2 million or 0.6 per cent more than the agency's forecast operating expenditure. The increase in operating expenditure is primarily due to the increase in MDBC costs the capital component of which the Tribunal has treated as a pass through item in operating expenditure.
- The net effect of the Tribunal's draft 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 $139.9 million. This amount is $45.8 million or about 25 per cent less than the agency's forecast capital expenditure (see Table 8.5).

In relation to DNR:

- The net effect of the Tribunal's draft findings is that the level of efficient forecast operating expenditure used in calculating DNR's notional revenue requirement for the

2006 determination period is $189.8 million (see Table 6.3). This amount is $28.0 million or 12.9 per cent less than the agency's forecast operating expenditure.

- The net effect of the Tribunal's draft findings is that the level of efficient capital expenditure used in calculating DNR's notional revenue requirement for the 2006 determination period is $9.2 million. This amount is the same as the DNR's forecast capital expenditure.

In terms of impacts on the environment, the draft 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.

1.4 Moving forward

A key concern of this review by the Tribunal and stakeholders has been the transparency and efficiency of costs. In its review of the agencies' operating and capital expenditure proposals, 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.[5]

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 prior to the next determination.

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. The Tribunal intends working with the agencies

[5] 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.

to define the performance indicators and measures that identify the benefits to customers from the increased expenditure and prices.

1.5 Structure of this report

This report explains the Tribunal's draft determination in detail, including how and why it reached its draft decisions and what those draft 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 price 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 draft 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, 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 draft 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 draft findings related to the calculation of these revenue requirements over the 2006 determination period:
  - Chapter 6 provides an overview of the draft decisions on the revenue requirement for each agency, and the user and government shares of each component of this revenue
  - Chapter 7 explains the draft findings on the revenue required for operating expenditure
  - Chapter 8 explains the draft findings on the efficiency of the agencies' forecast capital expenditure
  - Chapter 9 explains the draft 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 draft 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 draft 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 draft decisions on the prices for specific water bulk services
- Chapter 13 analyses the impact of the draft 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 draft 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.

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.

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[6] about the level of public consultation and education on DNR's water resource management charges.

6 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[7]
- 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.

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 take account of these broader Government commitments and balance 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.

The Tribunal notes that the National Water Commission (NWC) recently reviewed NSW's compliance with the National Competition Policy.[8] 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.

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7 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.

8 National Water Commission, 2005 National Competition Policy assessment of water reform progress, March 2006.

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 at least 50 per cent of its revenue from usage charges from 1 July 2006 and then 60 per cent from 1 July 2008.
- 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.

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 draft 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.[9]

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 6,300 customers[10], including irrigation corporations, country town water supply authorities, farms, mines and electricity generators. It also meets

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

10 Approximately 6,100 irrigation, 130 industry and 69 town water supplies.

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.

The costs of managing and maintaining assets under these 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, it seeks recovery of the NSW share of costs[11] 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.[12]

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.

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.

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

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

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.[13]

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.

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[14] from DNR. In turn, DNR seeks recovery of the user-share component of these costs through its bulk water prices.

13 Submission to IPART to set Water Resource Management Charges from 1 July 2006, p 9.

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

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 DRAFT 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 draft 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.

4.1.1 Determination period

The Tribunal's draft 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 draft 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 return on 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 through 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 draft 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 9).

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)**

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 draft finding is to fund 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 to fund 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 2006 review.

In its submission to this review, State Water proposed that the revenue required to fund 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 funding model 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.

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 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[15]
- the factors set out in Section 15 of the IPART Act.

The Tribunal found that all three approaches it considered are consistent with the NWI requirement (see Appendix 2) to set prices between the lower and upper pricing bounds. While the annuity and constant amortisation approaches can be shown to meet both the lower and upper pricing bounds, the RAB approach lends itself more to upper bound pricing. Lower bound pricing requires provision be made for future refurbishment/replacement of assets whereas upper bound pricing requires a provision for the cost of asset consumption and the cost of capital.

In general, other stakeholders did not strongly support or oppose State Water's proposal to move away from the annuity approach adopted by the Tribunal in previous determinations to the RAB approach. Some stakeholders commented that there is insufficient information presented in State Water's submission to fully assess the implications of the different funding models.

A number of stakeholders, while not opposing the principle of using a RAB approach to fund capital expenditure, expressed concerns about the way that State Water proposed to implement this approach. In particular, some were concerned about State Water's proposal to establish an opening RAB of $302 million and to incorporate the MDBC and DBBRC annuities into the opening RAB. In general, these stakeholders argued that the opening RAB should be based on State Water's actual capital expenditure since the 1997 'line-in-the-sand' (pre-1997 assets were valued to zero). According to State Water this would lead to an opening RAB more like $75 million.

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 making its draft determination. 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.

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

The Tribunal notes that although the impact of adopting a RAB approach in place of the annuity approach on customer bills is likely to be small over the 2006 determination period, the longer-term impact may be significant depending upon the opening RAB value. As noted above, while stakeholders are not opposed to using a RAB approach, some are concerned about the opening value of the RAB. The Tribunal has considered these concerns, 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 draft decision is to treat the actual costs paid by the Government to MDBC and DBBRC as pass through amounts and to introduce a mechanism to adjust State Water's Murray valley prices for material differences between forecast MDBC costs and audited actual MDBC costs in the determination period.

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. 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.

During the consultation process, irrigators in the Murray and Murrumbidgee valleys raised concern about the lack of transparency in relation to MDBC costs, the allocation of these costs between users and government, and how the user-share of these costs is allocated to valleys. The Tribunal notes that the majority of the MDBC costs relate to operations in the Murray valley and that Murray valley prices are greatly impacted by the MDBC costs.

In its submission, 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.

No stakeholders supported State Water's proposed approach to the costs for MDBC and DBBRC capital expenditure. The NSW Irrigators' Council and the Ricegrowers Association opposed such an inclusion.

The Tribunal considered State Water's proposal and stakeholder views on these costs. It also sought advice from its consultants, PB Associates and Halcrow/MMA on the costs. In addition, it considered whether the current approach to treating these costs should be changed, and whether the level and allocation of costs are reasonable.

The Tribunal concluded that it would be inappropriate to adopt State Water's proposal to consider MDBC and DBBRC costs related to capital expenditure and assets using a regulatory asset base for this determination. The inter-jurisdictional agreements in place already provide a clear basis for the allocation of these costs to NSW. Further, the Tribunal understands that MDBC and DBBRC report on these assets in their financial accounts. For these reasons the Tribunal has decided not to adopt State Water's proposal, and to continue to treat MDBC and DBBRC costs as pass through amounts. The Tribunal's assessment of MDBC and DBBRC costs is discussed in Chapter 7.

In relation to the lack of transparency and scrutiny of MDBC and DBBRC costs, the Tribunal is concerned that irrigators (and other customers) only pay for costs that reflect the actual costs paid to MDBC and DBBRC by the NSW government, rather than the forecast costs. The Tribunal notes that the National Water Commission's recent review of the Government's compliance with the National Competition Policy raised similar concerns.[16] Since their submissions were made, DNR has provided the Tribunal with new forecasts in line with MDBC's adjusted budget. The Tribunal also notes that the Ministerial Council does not adopt the MDBC budget until May each year. The uncertainty about these cost forecasts adds to the Tribunal's concerns in this area. From its analysis, it is not confident that the actual costs to be paid will reflect the forecast amounts.

Given these concerns, the Tribunal considered whether to introduce an adjustment mechanism to ensure that customers only pay the actual costs incurred on MDBC. It looked at options for adjusting prices within the determination period and after the period, and assessed the data, reporting and associated costs of such mechanisms. It also took into account that the majority of these costs are allocated to the Murray valley. On balance, the Tribunal's draft decision is that a mechanism should be introduced 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.

In addition, the Tribunal proposes to raise this issue with the NSW government with the objective of improving the reporting and disclosure of information to stakeholders in general, and of ensuring it is able to be confident that only those costs charged to the NSW government and then on-charged to State Water and DNR are recovered from users. The Tribunal believes that this will address the National Water Commission's concern of the lack of transparent allocation of the MDBC costs among users.[17]

4.2.3 Approach to factoring entitlements associated with conveyance licences into prices

The Tribunal's draft 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.

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.

16 National Water Commission, 2005 National Competition Policy assessment of water reform progress, March 2006.

17 National Water Commission, 2005 National Competition Policy assessment of water reform progress, March 2006.

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.[18]

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. 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.

The Tribunal concluded that in order to create incentives for Irrigation Corporations to improve the efficiency of their transportation systems, it is necessary to charge these corporations for their total conveyance entitlement volume. Given this, the Tribunal's draft decision is that Irrigation Corporations should be charged for conveyance licence

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

entitlements. The Tribunal believes that this means that the point of charging is the river off-take point.

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 although the water sharing plans appear to allocate a security status slightly above General Security for some proportion of conveyance licence entitlements, it does not provide the same level of security as a High Security licence. Therefore, the Tribunal believes that it would be inappropriate to charge any of 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 draft 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.

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.

Because the Tribunal's decisions about the users' share of costs have a significant impact on prices, and to some extent are based on the Tribunal's judgement, these decisions are usually contentious. In past reviews, they have been subject to extensive review and consultation. For this review, the Tribunal decided to build on 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.

The Tribunal's draft 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
- stakeholders' comments
- the Tribunal's analysis, including the review by CIE on the appropriate cost sharing ratios.

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

For State Water, the Tribunal's draft 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 Table 5.1.

For DNR, the Tribunal's draft 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 5.2.

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.[19]

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[20] 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.

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

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 5.2. 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

[19] 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.

[20] 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.

- 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].[21]

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.

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 5.2).

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

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 and to CIE's report on its review of cost sharing ratios. 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 and Fibre, Namoi Water), from various conservation groups and from one individual.

While State Water broadly agrees with the Tribunal's principles and approach for allocating costs, there is some debate among other stakeholders about how forward-looking costs should be allocated. Most irrigator groups argued 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.

5.6 Tribunal's analysis and draft findings

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

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.

For State Water, 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. However, it agreed with State Water's proposal to increase the users' share of costs associated with hydrometric monitoring to 100 per cent. The Tribunal also 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.

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

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

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. Murray Irrigation recommends that all water users in the MDBC within NSW should contribute tot the costs associated with Murray River Water. However, the Tribunal concluded that these costs should be allocated consistent with its draft findings for State Water's costs as shown in Table 5.1.

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 draft 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 on the basis of evidence presented to it. In addition, CIE's recommendations do not support this overall trend.

Table 5.2 shows the Tribunal's draft 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 draft 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 5.2 Tribunal's draft findings on DNR's user-cost share ratios compared to the ratios used in the 2001 determination, proposed by DNR and recommended by CIE (%)

Activity Code	WRM activity	IPART 2001 Determination[22]	DNR submission	CIE recommendation	Tribunal's draft finding
		%	%	%	%
Surface water information provision					
C01-01	Surface water quantity monitoring/reporting/information provision	70,80,0,50	90	70	70
C01-02	Surface water statewide data management	0,0	90	50	50
C01-03	Surface water quality monitoring/reporting/information provision	50,50,0,50	63	50	50
C01-04	Surface water ecology/biology information provision	50	63	0	50
C01-05	Surface water quality statewide database management	50,0	63	50	50
C01-06	Surface water asset management — for quantity/quality information provision	70,80,50,50	90	50–70	70
Groundwater information provision					

22 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[22]	DNR submission	CIE recommendation	Tribunal's draft finding
		%	%	%	%
C02-01	Groundwater quantity monitoring/reporting/ information provision	100,100	100	70–100	100
C02-02	Groundwater quality monitoring/reporting/information provision	100,100	100	70–100	100
C02-03	Groundwater statewide corporate database management	100	100	70–100	100
C02-04	Groundwater asset management — for quantity/quality information provision	100,100,100 100	100	70–100	100
Coastal and estuary information provision					
C03-01	Coastal and estuary monitoring and information provision	70,80,50,50	0	0	0
C03-02	Coastal and estuary asset management — for quantity and quality monitoring	70	0	0	0
Surface water and groundwater analysis					
C04-01	Analytical services for water quality programs	50	81	50	50
Water modelling and impact assessment					
C05-01	Water sharing/accounting projects	50,100	100	0–30	50
C05-02	Water assessments	0,10,100	50	0–30	30
C05-03	Water balances/accounting	100,100,100	100	100	100
C05-04	Groundwater balances/ accounting	100,100,100	100	100	100
Water Sharing Plan implementation					
C06-01	Environmental water provisions (Parts 3 & 5)	Na	100	0	0
C06-02	Limits to availability of water (Parts 5 & 8)	Na	100	70–100	100
C06-03	Rules for managing access licences (Parts 5 & 9)	Na	100	100	100
C06-04	Access dealing rules (Parts 5 & 10)	Na	100	100	100
C06-05	System operation rules (Part 12)	Na	100	100	100
C06-06	Monitoring and Reporting (Parts 5 & 13)	Na	100	0	50
C06-07	Plan amendments (Part 14)	Na	100	50	50
WRM planning					
C07-01	Water sharing plan development	100,100,100	100	50	70
C07-02	Water use plans		100	50–70	70
C07-03	Drainage plans		0	0	0
C07-04	Floodplain plans	0	0	0	0
C07-05	Floodplain harvesting plans	100	100	70–100	100
C07-06	Environmental water management planning	0	100	0	0
C07-07	Water savings planning		100	0	0
C07-08	Delivery capacity rights planning	100,100,100	100	70–100	100
C07-09	Wetland recovery plan major initiative	0	100	0	0
C07-10	NSW wetland policy implementation		80	0	0

Activity Code	WRM activity	IPART 2001 Determination[22]	DNR submission	CIE recommendation	Tribunal's draft finding
		%	%	%	%
C07-11	NRC reviews and support of water sharing plans		100	0	50
C07-12	CMA support for environmental water programs		50	0	0
C07-13	River health and water quality plans	0	90	0	0
C07-14	Impact of dams on water quality	0	0	0	0
C07-15	Blue-green algae operational planning	0,0,0	0	0	50
C07-16	Bacterial, chemical, salinity and other regional operational planning	0	0	0	0
C07-17	Interstate and national commitments	50	20	0	50
River management works (non-capital)					
C08-01	River management works planning	100	100	50	50
C08-02	River bank and river bed remediation	100	100	50	50
Water consent administration					
C09-01	Head office systems administration	80,100	100	100	100
C09-02	Regional administration	80,100,100	100	100	100
C09-03	Head office register administration	100,100,100 100,100,100	100	100	100
C09-04	Licence cleansing	100,100	100	100	100
C09-05	Town water supply entitlements	100,100	100	100	100
C09-06	Compliance	100, 100	100	100	100
C09-07	Systems development		100	100	100
Water consent transaction					
C10-01	*Water Act 1912* consents transactions	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
Business administration					
C11-01	Metering and billing water usage	100,100	100	100	100
C11-02	WRM business development	100	100	70	70
C11-03	Financial administration	50,80	80	70–100	100
WRM systems capital program					
C12-01	Metering and monitoring of water use systems on unregulated rivers and groundwater	90,90	100	70	90
C12-02	IMEF	0	100	0	0
C12-03	Groundwater monitoring network for water sharing plans and extension of surveillance and salinity networks	100,100	100	70	70
C12-04	Integrated corporate water and ecological databases	80,50	50	30	50
C12-05	Water and wetland recovery management	0	100	0	0

The Tribunal notes that CIE did not specifically consider the allocation of MDBC and DBBRC costs between users and the Government. However, the Tribunal concluded that these costs should be allocated consistent with its draft findings for DNR's other costs as shown in Table 5.2.

6 OVERVIEW OF DRAFT 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'.[23] 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 draft 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 draft 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 draft findings in relation to the revenue required for operating expenditure. Chapters 8 and 9 explain the draft findings in

[23] 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.

relation to the revenue 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 draft findings on notional revenue requirements

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

Financial Year		2005/06[24]	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
State Water	Total agency	**57.6**	**75.6**	**74.0**	**76.0**	**78.0**	**303.6**
	User-share	*37.9*	*54.0*	*52.4*	*53.0*	*53.4*	*212.7*
DNR	Total WRM activities	**52.5**	**48.5**	**48.8**	**49.1**	**46.9**	**193.2**
	User-share	*34.2*	*31.9*	*32.3*	*32.2*	*31.3*	*127.6*

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

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

In relation to State Water, the Tribunal's draft finding on the overall notional revenue requirement is $95.3 million (or 23.9 per cent) less than the agency's forecast for the determination period. For DNR, it is $32.3 million (or 14.3 per cent) less than DNR's forecasts for the determination period. The Tribunal's draft findings reflect its views on the efficient level of operating expenditure and efficient costs of financing capital investment for each agency.

24 Per 2005 determination.

Table 6.2 Tribunal's draft 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)					
Operating expenditure	48.2	48.5	47.3	46.2	190.3
Return of capital (depreciation)	4.7	5.5	6.4	7.2	23.9
Allowance for return on assets	39.9	44.0	48.4	52.4	184.7
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					
Operating expenditure	51.2	47.5	46.8	46.0	191.6
Return of capital (depreciation)	2.8	3.2	3.7	4.2	13.8
Allowance for return on assets	21.6	23.3	25.5	27.8	98.3
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
Difference between Tribunal's finding and agency forecast	-17.2	-24.1	-26.2	-27.8	-95.3

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

Table 6.3 Tribunal's draft 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	54.4	55.0	55.0	53.4	217.8
Return of capital (depreciation)	1.8	1.9	2.0	2.0	7.7
DNR revenue requirement	56.2	56.9	57.0	55.4	225.5
Split between:					-
Calculated user-share	*47.7*	*49.2*	*49.1*	*48.5*	*194.5*
Calculated Government-share	*8.4*	*7.8*	*7.9*	*6.9*	*31.0*
Tribunal draft finding					
Operating expenditure	47.7	47.9	48.2	46.0	189.8
Return of capital (depreciation)	0.8	0.8	0.9	0.9	3.4
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*
Difference between Tribunal's finding and agency forecast	*-7.7*	*-8.2*	*-7.9*	*-8.5*	*-32.3*

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

The differences between the agencies' forecasts and the Tribunal's draft 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 6.4 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.

6.3 Breakdown of user-share notional revenue requirement by valley

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

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

Region/river valley	2005/06[25]	2006 determination period				
		2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
State Water						
Border	1.4	2.5	2.0	2.0	2.0	8.6
Gwydir	2.9	3.9	3.7	3.7	3.6	14.9
Namoi	3.0	4.0	3.8	3.9	3.9	15.6
Peel	0.8	1.2	1.1	1.1	1.1	4.5
Lachlan	4.3	4.5	4.3	4.3	4.4	17.6
Macquarie	3.6	4.4	4.2	4.2	4.3	17.1
Far West	-	-	-	-	-	-
Murray	10.0	14.5	14.9	15.5	15.8	60.7
Murrumbidgee	8.0	7.0	6.6	6.6	6.6	26.8
North Coast	0.4	0.8	0.8	0.8	0.8	3.1
Hunter	3.2	3.8	3.6	3.6	3.6	14.6
South Coast	0.4	0.7	0.7	0.7	0.7	2.8
Fish River Scheme	n/a	6.7	6.6	6.6	6.6	26.5
Total	**37.9**	**54.0**	**52.4**	**53.0**	**53.4**	**212.7**

Totals may not add due to rounding.

State Water's user-share notional revenue requirement has increased in most valleys from 2005/06 to 2006/07, with the exception of the Murrumbidgee valley. These movements largely reflect the changes in the efficient operating costs determined by the Tribunal in these two years, as discussed in Chapter 7. In the case of the Murray valley, the large increase in the user-share notional revenue requirement from 2005/06 to 2006/07 reflects the increased costs attributed to the MDBC.

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 draft finding on the operating expenditure efficiencies, as discussed in Chapter 7.

25 Per 2005 determination.

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

Region/river valley	2005/06[26]	2006 determination period				
		2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Regulated Rivers						
Border	0.8	0.6	0.6	0.6	0.6	2.5
Gwydir	0.9	0.6	0.6	0.6	0.6	2.4
Namoi	1.0	0.6	0.6	0.6	0.6	2.3
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	1.0	4.3
Far West	-	-	-	-	-	-
Murray	3.1	4.5	4.5	4.4	4.0	17.4
Murrumbidgee	2.4	3.0	3.0	2.8	3.0	11.8
North Coast	0.1	0.3	0.3	0.3	0.3	1.0
Hunter	1.6	0.4	0.4	0.4	0.4	1.6
South Coast	0.1	0.1	0.1	0.1	0.1	0.3
Total	**12.1**	**11.9**	**12.3**	**11.9**	**11.6**	**47.7**
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	0.7
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	0.5	0.5	0.6	0.5	2.0
Macquarie	0.7	0.4	0.5	0.5	0.5	2.0
Far West	1.4	1.4	1.4	1.5	1.4	5.7
Murray	0.3	0.3	0.3	0.4	0.4	1.4
Murrumbidgee	0.5	0.4	0.4	0.8	0.5	2.1
North Coast	2.9	2.0	2.0	2.1	2.1	8.3
Hunter	1.3	1.1	1.1	1.1	1.0	4.2
South Coast	3.2	3.0	3.0	3.0	3.0	12.1
Total	**11.6**	**9.7**	**9.9**	**10.5**	**10.1**	**40.1**
Groundwater						
Border	0.1	0.4	0.4	0.4	0.4	1.5
Gwydir	0.4	0.7	0.7	0.7	0.7	2.6
Namoi	1.7	0.9	0.9	0.9	0.9	3.6
Peel	0.4	0.2	0.2	0.2	0.2	1.0
Lachlan	0.8	1.2	1.2	1.1	1.0	4.5
Macquarie	0.9	1.6	1.6	1.4	1.4	6.0
Far West	1.3	0.8	0.7	0.5	0.5	2.5
Murray	0.9	1.1	1.1	1.1	1.1	4.3
Murrumbidgee	1.7	0.9	0.9	0.9	0.9	3.6
North Coast	0.6	0.9	1.0	1.0	1.0	3.9
Hunter	0.6	0.8	0.7	0.8	0.8	3.0
South Coast	1.0	0.8	0.8	0.8	0.8	3.3
Total	**10.6**	**10.3**	**10.1**	**9.8**	**9.6**	**39.8**

[26] Per 2005 determination.

For DNR's regulated rivers, the user-share notional revenue requirement has declined slightly in a number of valleys from 2005/06 to 2006/07. The increase in the Murray for this period is due to the higher MDBC costs. From 2006/07 to 2009/10 the user-share notional revenue requirement remains relatively constant in real terms.

For unregulated rivers and groundwater, the Tribunal's draft 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 remain relatively constant in real terms.

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's draft 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
- MDBC and DBRRC operating costs
- the Tribunal's analysis and draft findings in relation to each agency.

7.1 Summary of Tribunal's draft findings on operating expenditure

The Tribunal's draft 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 draft 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	**51.2**	**47.5**	**46.8**	**46.0**	**191.6**
Calculated user-share	*41.7*	*39.2*	*39.1*	*38.7*	*158.7*
Calculated Government-share	*9.6*	*8.3*	*7.6*	*7.3*	*32.9*
DNR	**47.7**	**47.9**	**48.2**	**46.0**	**189.8**
Calculated user-share	*31.3*	*31.7*	*31.6*	*30.7*	*125.4*
Calculated Government-share	*16.4*	*16.2*	*16.6*	*15.3*	*64.5*

The draft findings on the revenue required for operating expenditure for each valley are set out in Appendix 4.[27]

7.2 Agencies' forecast operating expenditure

7.2.1 State Water

In its submission, State Water forecast total operating costs of $190.3 million over the draft determination period, of which $182.5 million is the user share (Table 7.2). 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).

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

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
Calculated user-share	*46.4*	*46.7*	*45.2*	*44.1*	*182.5*
Calculated Government-share	*1.8*	*1.9*	*2.1*	*2.1*	*7.9*
Total	**48.2**	**48.5**	**47.3**	**46.2**	**190.3**

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

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

State Water's forecast operating expenditure for 2006/07 is $34.2 million (excluding $14.0 million for MDBC, DBBRC and Fish River Scheme costs). This represents an increase of $8.5 million over its actual expenditure of $25.7 million in 2004/05 (its first year as a corporatised entity). According to State Water, this increase is necessary to enable increased staffing levels:

- to meet its increased obligations under the water sharing plans (contributing an additional $5.4 million in costs), and
- to allow it to operate as a stand-alone business (for example, to provide its own corporate services).

State Water proposed a staffing level of 310 full time equivalents (FTEs) in 2006/07, compared to 253 FTEs in 2004. It also proposed increases in government-approved remuneration ($0.6 million), office accommodation ($0.7 million), and IT costs ($1.5 million).

State Water recently advised the Tribunal that its forecast operating expenditure requires significant changes to comply with the adoption of the International Financial Reporting Standards (IFRS). State Water expects to submit revised forecasts to the Tribunal shortly. The Tribunal will examine the impact of adopting the IFRS on its draft findings on forecast operating expenditure prior to releasing its final determination.

7.2.2 DNR

In its submission, DNR forecast total operating expenditure of $217.8 million over the draft determination period, of which $187.8 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	46.2	47.5	47.4	46.7	187.8
Calculated Government-share	8.2	7.5	7.6	6.7	30.0
Total	**54.4**	**55.0**	**55.0**	**53.4**	**217.8**

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

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.

The Government has recently announced the restructure of DNR.[28] This restructure involves somes reductions in staffing levels and the relocation to Orange. The Tribunal understands that DNR is yet to asses how the restructure will impact the costs of DNR's water resource management activities. Further, as noted in section 7.8 below, the Tribunal has not accepted DNR's proposed staffing levels. Thus, this reduction may or may not make a difference to the Tribunal's decisions. Given the timing of the announcement, it is too late to incorporate these reductions for the purposes of the Draft Report. The Tribunal will consider this matter prior to making its final determination.

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[29] 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.

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 7.4 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 2007/8, 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

[28] Minister for Primary Industry and Minister for Natural Resources, Media Release, 12 May 2006.

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

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 $53.3 million ($ Real 2005/06), compared to average annual actual expenditure of $42.8 million ($ Real 2005/06) for the period 2001/02 to 2005/06. This represents an average increase of around 25 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 7.8 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[30] 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 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 review and recommendations

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.

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. They then adjusted this baseline to take into account justifiable changes from this baseline to 2004/05 and then to 2005/06. 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.

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

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.

7.6 MDBC and DBBRC operating costs

As noted above, neither PB Associates nor Halcrow/MMA reviewed the agencies' forecast costs associated with the MDBC and the DBBRC. To date, there has never been an independent assessment of the efficiency of MDBC's and DBBRC's operating and capital costs.

These costs are a key concern for the Tribunal and for irrigators in the Murray and Murrumbidgee valleys. The Tribunal's main concerns are that these costs are:

- not transparent, which makes it difficult for them to be reviewed
- not allocated appropriately between government and users
- not allocated appropriately among the valleys.

The Tribunal has expressed its concerns about the MDBC and DBBRC costs in past determinations. However, it is difficult for it to assess the efficiency and prudency of these costs as they are outside its jurisdiction. In addition, State Water and DNR have no control over these costs – rather, they are agreed by the Ministerial Council, then incurred and managed by the Commissions and simply passed through to State Water and DNR.

7.7 Tribunal's analysis and draft 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 draft 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.

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

The Tribunal's draft finding is to adopt Halcrow/MMA's recommendations on the efficient level of State Water's forecast operating expenditure (excluding MDBC and DBBRC costs).

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. 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. Therefore, the Tribunal has decided to adopt Halcrow/MMA's recommendation.

Halcrow/MMA's recommended level of efficient operating expenditure is shown in Table 7.4.

Table 7.4 Halcrow/MMA's recommended levels of efficient operating expenditure (excluding MDBC and DBBRC costs) for State Water ($ million, Real 2006/07)

	2006/07	2007/08	2008/09	2009/10	Total
State Water 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 recommendation	31.3	28.7	28.0	27.2	115.2
Tribunal draft finding	**31.3**	**28.7**	**28.0**	**27.2**	**115.2**
Calculated user-share	*29.1*	*26.7*	*26.1*	*25.4*	*107.3*
Calculated Government-share	*2.2*	*2.0*	*1.9*	*1.9*	*7.9*

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

7.7.2 Efficient level of forecast MDBC and DBBRC operating expenditure

The Tribunal's draft finding on State Water's efficient level of forecast MDBC and DBBRC costs is to adopt the costs set out in Table 7.5.

The MDBC and DBBRC costs reflect the recovery by the Commissions of their operating and capital expenditures. State Water proposed to treat the capital component as part of its RAB roll forward. The Tribunal does not agree with this approach and has treated the total MDBC and DBBRC costs as a pass through item that is included in operating costs.

A number of stakeholders, particularly Murray Irrigation, have raised significant concerns over the level and lack of transparency of the MDBC costs.

The MDBC has provided revised cost estimates to the Tribunal. State Water has confirmed the revised cost estimates for the capital component but was unable to confirm the operating component of the MDBC costs. The Tribunal notes its draft decision to include a mechanism in the determination so that customers in the Murray valley pay the actual MDBC costs (see section 4.2.2). Therefore, the Tribunal's draft finding is to accept MDBC's revised capital component and to accept State Water's proposed operating expenditure component of the costs.

Given the relatively low level of forecast DBRRC costs, the Tribunal decided to accept State Water's forecasts of these costs.

Table 7.5 Tribunal's draft finding on State Water's efficient level of forecast MDBC and DBRRC 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**
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**

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

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

The net effect of the Tribunal's draft 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 $191.6 million. This amount is $1.2 million or 0.6 per cent more than the agency's forecast operating expenditure (see Table 7.6). The increase in operating expenditure is primarily due to the Tribunal's treatment of the MDBC capital costs as a pass through item that is included in operating costs.

Table 7.6 Tribunal's draft 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**
Calculated user-share	*41.7*	*39.2*	*39.1*	*38.7*	*158.7*
Calculated Government-share	*9.6*	*8.3*	*7.6*	*7.3*	*32.9*

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

7.8 Tribunal's analysis and draft 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 draft 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.

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

The Tribunal draft 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 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.

7.8.2 Efficient level of forecast MDBC and DBBRC operating expenditure

The Tribunal's draft finding on DNR's efficient level of forecast MDBC and DBBRC costs is to adopt the costs set out in Table 7.7.

The Tribunal's draft finding is to accept the revised estimate of MBDC costs 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 7.7 Tribunal's draft finding on DNR's efficient level of forecast MDBC and DBRRC operating expenditure ($ million, Real 2006/07)

	2006/07	2007/08	2008/09	2009/10	Total
MDBC					
DNR forecast	4.7	4.1	3.9	3.1	15.8
MDBC revised estimate	4.0	4.1	3.9	3.1	15.1
Tribunal draft finding	**4.0**	**4.1**	**3.9**	**3.1**	**15.1**
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**

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

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

The net effect of the Tribunal's draft 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 $189.8 million. This amount is $28.0 million or 12.9 per cent less than the agency's forecast operating expenditure (see Table 7.8).

Table 7.8 Tribunal's draft 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)	54.4	55.0	55.0	53.4	217.8
DNR forecast (excluding MDBC and DBBRC)	49.3	50.5	50.8	49.9	200.4
PB Associates draft recommendation	42.4	43.2	43.4	43.1	172.1
Halcrow/MMA recommendation	43.0	43.1	43.6	40.8	170.4
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**
Calculated user-share	*31.3*	*31.7*	*31.6*	*30.7*	*125.4*
Calculated Government-share	*16.4*	*16.2*	*16.6*	*15.3*	*64.5*

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

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 draft 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 draft finding on the level of efficient forecast capital expenditure was not used directly in any calculation. However, the Tribunal took this draft finding 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.

The Tribunal's draft 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 review and recommendations
- the Tribunal's analysis and draft findings in relation to each agency.

8.1 Summary of Tribunal's draft findings on capital expenditure

The Tribunal's draft 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 draft 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	**19.9**	**38.6**	**39.7**	**41.7**	**139.9**
Calculated user-share	*12.6*	*11.8*	*11.0*	*13.3*	*48.7*
Calculated Government-share	*7.3*	*26.8*	*28.7*	*28.4*	*91.2*
DNR	**4.4**	**4.1**	**0.8**	**-**	**9.3**
Calculated user-share	*2.9*	*2.7*	*0.5*	*-*	*6.1*
Calculated Government-share	*1.5*	*1.4*	*0.3*	*-*	*3.2*

Totals may not add due to rounding.

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

8.2 Agencies' forecast capital expenditure

8.2.1 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. Based on this program, State Water forecast total capital expenditure of $185.7 million over the 2006 determination period, of which $61.4 million is the user share (Table 8.2).

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

Financial Year	2006/07	2007/08	2008/09	2009/10	Total
Calculated user-share	17.3	15.3	13.1	15.6	61.4
Calculated Government-share	13.2	39.8	36.6	34.7	124.3
Total	**30.6**	**55.2**	**49.7**	**50.3**	**185.7**

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

The main projects included in State Water's capital works program ($ Real 2006/07) over the period 2006/07 to 2010/11 are:

- compliance with dam safety standards for flood security and seismic security at Copeton Dam in Gwydir ($18.3 million), Wyangala Dam in Lachlan ($24.8 million) and Chaffey Dam in Peel ($17.1 million)
- compliance with dam safety standards for flood security, seismic security and enhancement of service levels with increased outlet capacity at Burrendong Dam in Macquarie ($23.7 million) and Blowering Dam in Murrumbidgee ($13.0 million)
- the upgrade of Keepit Dam and Split Rock Dam in Namoi for flood security and seismic security ($73.2 million).

More than half of State Water's total forecast capital expenditure for the draft determination period is associated with dam safety compliance.

8.2.2 DNR

DNR forecast total capital expenditure of $9.2 million over the draft determination period, of which $7.9 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	3.8	3.5	0.7	-	7.9
Calculated Government-share	0.6	0.5	0.1	-	1.3
Total	4.4	4.0	0.8	-	9.2

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

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 2004/05) 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 2004/05) 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.

8.3 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.

8.3.1 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[31], 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.

[31] 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.

- 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.

8.3.2 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.

8.4 Stakeholder submissions

As noted in Chapter 7, most 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. These views are summarised in section 7.4 above. However, the views most relevant to forecast capital expenditure are as follows:

- Stakeholders who commented on State Water's and DNR's forecast expenditure noted that there was insufficient information in the agencies' submissions for them to make a judgement on the prudence and efficiency of these expenditures.
- 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.
- Many stakeholders, including Murray Irrigation Ltd, Murrumbidgee Irrigation Corporation, 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 support PB Associates provided for its recommendations and the lack of quantifiable analysis.
- Murray Irrigation also raised concerns about State Water's ability to deliver its proposed expenditure programs.
- NSW Irrigators' Council engaged PricewaterhouseCoopers (PWC) to undertake a review of the PB Associates report on its behalf. PWC noted while PB Associates were limited in their assessment by the information and process available, the approach/adjustment does not appear to reflect all of the variables. PWC also argue that while presumably State Water will improve its capacity to deliver its budgeted capital programs, its ability to achieve such increases in the short term is not evident from the information provided.

8.5 Halcrow/MMA's review and findings

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 achieve 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 of 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.

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

The Tribunal's draft finding is to adopt Halcrow/MMA's recommendation to reduce State Water's forecast capital program to account for delivery constraints and performance.

The Tribunal considered State Water's submission 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. It also carried out its own analysis of the profile of expenditure across valleys. This analysis showed that approximately 88 per cent of State Water's forecast capital expenditure over the draft determination period is concentrated in six valleys: the Gwydir, Namoi, Peel, Macquarie, Lachlan and Murrumbidgee valleys.

The Tribunal is concerned that in the past State Water has consistently under-delivered on its proposed capital program. In addition, State Water has not provided the Tribunal with confidence that it will be able to deliver on its proposed capital program for the 2006 determination period. Therefore, it decided to adopt Halcrow/MMA's recommendation to reduce the capital program to account for delivery constraints and performance.

However, the Tribunal does not believe that Halcrow/MMA's recommended approach to applying the reductions across all valleys is appropriate because it relies on historical valley based expenditure. The Tribunal's consultants MJA/Cardno and PB Associates have previously questioned the robustness of this information. Halcrow contended that there are some river valleys that consistently underperform with regard to capital expenditure and others that consistently perform better. The Tribunal observes that the data identified in Table 10 of the Halcrow Report indicates that greater than budgeted expenditure typically occurred where the budget for a river valley was small or less than the previous year. The Tribunal believes that it is the size of the proposed changes in spend which mostly determines the performance in a valley in a given year. Therefore, the Tribunal has made the same proportional reduction across the six valleys where expenditure is concentrated. Halcrow/MMA's recommended forecast capital expenditure over the 2006 determination period applying the reductions equally across all the valleys in shown in Table 8.4.

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
State Water forecast	30.6	55.2	49.7	50.3	185.7
Halcrow delivery adjustment factor	(35%)	(30%)	(20%)	(17%)	
Halcrow delivery adjustment $m	-10.7	-16.6	-10.0	-8.6	-45.8
Halcrow recommendations	19.9	38.6	39.7	41.7	139.9

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

The Tribunal notes that in the event that State Water does carry out the works forecast, and the expenditure is prudent and efficient, under the RAB approach, these assets will be factored into prices for subsequent regulatory periods.

The net effect of the Tribunal's draft 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 $139.9 million. This amount is $45.8 million or about 25 per cent less than the agency's forecast capital expenditure (see Table 8.5).

Table 8.5 Tribunal's draft 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 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 recommendation	19.9	38.6	39.7	41.7	139.9
Tribunal draft finding	**19.9**	**38.6**	**39.7**	**41.7**	**139.9**
Calculated user-share	*12.6*	*11.8*	*11.0*	*13.3*	*48.7*
Calculated Government-share	*7.3*	*26.8*	*28.7*	*28.4*	*91.2*

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

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

The Tribunal's draft 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 draft finding is to adopt the agency's forecast.

The net effect of the Tribunal's draft findings is that the level of efficient capital expenditure used in calculating the DNR's notional revenue requirement for the 2006 determination period is $9.2 million. This amount is the same as the DNR's forecast capital expenditure (see Table 8.6).

Table 8.6 DNR's forecast compared with Tribunal's draft finding on efficient capital expenditure ($ million, Real 2006/07)

DNR	2006/07	2007/08	2008/09	2009/10	Total
DNR forecast	4.4	4.0	0.8	-	9.2
PB Associates draft recommendation	4.4	4.0	0.8	-	9.2
Halcrow/MMA recommendation	4.4	4.0	0.8	0.8	10.0
Tribunal draft finding	**4.4**	**4.0**	**0.8**	**-**	**9.2**
Calculated user-share	*2.9*	*2.7*	*0.5*	*-*	*6.1*
Calculated Government-share	*1.5*	*1.4*	*0.3*	*-*	*3.1*

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

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 draft 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 draft finding on the efficient level of forecast capital expenditure (discussed in Chapter 8).

The Tribunal's draft 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 draft 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 draft finding on agencies' notional revenue requirement for capital investment

The Tribunal's draft 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	**24.4**	**26.4**	**29.2**	**32.0**	**112.1**
Calculated user-share	*12.3*	*13.1*	*13.9*	*14.7*	*54.0*
Calculated Government-share	*12.1*	*13.3*	*15.3*	*17.3*	*58.0*
DNR	**0.8**	**0.8**	**0.9**	**0.9**	**3.4**
Calculated user-share	*0.7*	*0.7*	*0.7*	*0.8*	*2.9*
Calculated Government-share	*0.1*	*0.1*	*0.2*	*0.1*	*0.5*

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

As discussed in section 4.2.1, the Tribunal has decided to fund State Water's forecast capital expenditure by using the RAB approach. 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 draft 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 draft findings on the 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 2005 on the basis of actual prudent capital expenditure over this period (net of capital contributions)
- rolling forward the 30 June 2005 RAB to 30 June 2006 on the basis of the estimated efficient capital expenditure for this period (as discussed in Chapter 8) (net of capital contributions)[32]
- deducting estimated regulatory depreciation
- deducting actual/forecast disposals
- indexing the annual closing regulatory asset base for actual/forecast inflation.

[32] Given that the actual expenditure for this year is not fully known at the time of the determination, the Tribunal has used the estimated expenditure for this year. This estimate has been assessed by the Tribunal as part of the review and adjusted where appropriate (see Chapter 8). At the next review, the RAB will be adjusted to reflect the difference between this estimate and actual expenditure for 2005/06.

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 draft 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 Fish River.

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[33] 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[34]. 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, the Tribunal has identified a number of departures by State Water in applying the Government's approach. The approach adopted by State Water involved:

- Capitalising the annuity[35] (taking account of the disposal value) based on its capital expenditure profile as at 1 July 2004 using a 7 per cent WACC.

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

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

35 The annuity used by State Water differs from the annuity the Tribunal has used in the calculation. The Tribunal used the annuity as determined in the 2001 Determination. State water has calculated a new annuity based on its capital expenditure profile at 1 July 2004.

- Adjusting the resulting value by an 'overpayment amount' calculated as the difference between the capitalisation of the Tribunal's 2001 annuity allowance and an annuity based on actual expenditure over the period 1997-2004. State Water capitalised the annuities by applying a return on and of assets (using a WACC of 7 per cent and asset life of 160 years) and rolling forward actual capital expenditure from a base of zero in 1997.
- Apportioning the adjusted value across State Water's assets, MDBC, DBBRC and the Fish River Scheme using the proportions of the annuities determined as at 1 July 2004, resulting in a proposed opening RAB of $302.6 million excluding MDBC, DBBRC and the Fish River Scheme.
- Apportioning this $302.6 million across valleys and between users and government on the basis of the Tribunal's 2001 determination allowance for the value of the annuity at that time.

The Tribunal is concerned about this 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 making this decision, the Tribunal has been mindful of its 1998 decision to provide a nil value for all pre-1997 capital expenditure in setting prices. It notes that a range of stakeholders have expressed concern about the value of pre-1997 assets being included in establishing an opening value for the RAB, including NSW Irrigators' Council, Murrumbidgee Irrigation, Macquarie River Food and Fibre, Lachlan valley Water Inc., Murray Irrigation, Coleambally Irrigation, Gwydir Valley Irrigators Association and Jemalong Irrigation.

The Tribunal notes that its 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.

The Tribunal considered the financial impact of its draft 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.[36]

The Tribunal notes that its draft 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.

[36] Based on Government funding its share of State Water's costs.

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 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.

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	684.7	768.2	852.2
Tribunal draft decision	361.1	409.7	461.6	517.9
Difference between agency proposal and Tribunal draft decision	-234.7	-275.0	-306.6	-334.4

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

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 draft 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 draft 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 draft finding on the rate of return

The Tribunal's draft finding is that for the purposes of calculating the allowance for a return on assets, a real pre-tax rate of return of 6.4 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 5.6 to 7.1 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
Nominal risk free rate	5.7%
Real risk free rate	2.6%
Inflation	3.1%
Market risk premium	5.5-6.5%
Debt margin and allowance for debt raising costs	1.1-1.2%
Debt to total assets	60%
Dividend imputation factor, or gamma	0.5-0.3
Tax rate	30%
Equity beta	0.8-1.0
Cost of equity (nominal post-tax)	10.1-12.2%
Cost of debt (nominal pre-tax)	6.8-6.9%
WACC range (real pre-tax)	**5.6-7.1%**

* Market parameters are calculated to 17 May 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.[37] 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.[38]

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37 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.

38 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.

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 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.[39]

Murray Irrigation Limited also opposed any adjustment to State Water's rate of return to address revenue risk.[40]

9.3.4 Tribunal's analysis

In making its draft 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, and the CIE's suggestion that this risk might be addressed through the WACC. Given that only systematic[41] or economy-wide risk is reflected in the equity beta, 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 believes that it has no conclusive evidence that State Water's systematic risk profile warrants a different equity beta than that used for the metropolitan water business.

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 5 per cent per cent of State Water's total notional revenue requirement.

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

40 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.

41 Systematic risk is the risk of holding the market portfolio. 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.

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

9.4.1 Depreciation method

The Tribunal's draft 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 draft 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
Existing assets - expenditure prior to 1 July 2004	160 years
New Assets - expenditure post 1 July 2004	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 draft 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	247
Gwydir	26	26	26	26	103
Namoi	30	30	30	30	120
Peel	-	-	-	-	-
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	-	-	-	-	-
Hunter	8	8	8	8	33
South Coast	16	16	16	16	66
Fish River Scheme	-	-	-	-	-
User total	**329**	**329**	**329**	**329**	**1,316**
Government share	-	-	-	-	-
Total	**329**	**329**	**329**	**329**	**1,316**

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

9.5 DNR's depreciation allowance

The Tribunal's draft 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 draft 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	2.0	2.0	**7.7**
Halcrow/MMA recommended	0.8	0.8	0.9	0.9	**3.4**
Tribunal's draft finding	**0.8**	**0.8**	**0.9**	**0.9**	**3.4**

Where appropriate, agency forecasts have been converted to 2006/07$.

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 draft 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 draft findings on consumption and entitlement volume forecasts

The Tribunal's has used 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	Highly managed areas		Other areas
	Licensed Entitlement ML	Usage ML	Licensed Entitlement ML
Barwon region	598,008	299,004	113,896
Lachlan	228,973	114,487	192,791
Macquarie	182,247	91,124	78,197
Far West		-	
Murray	426,026	213,013	81,465
Murrumbidgee	433,665	216,833	92,605
North Coast	96	48	38,110
Hunter	-	-	131,179
South Coast	-	-	34,671
Total	1,869,015	934,508	762,914

Notes:
1. The Barwon region includes Border, Gwydir, Namoi and Peel.
2. Information on the highly managed areas usage is unavailable and therefore the Tribunal has based it on 50 per cent of the licensed entitlement volumes.
3. The licensed entitlement volumes are the 2005/06 volumes before any reductions resulting from the water sharing plans.
4. Entitlement and usages volumes for groundwater in the Far West were not available in time for the draft report.

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 draft 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[42]). 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 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.

42 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.

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[43]	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			

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".[44]

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 arbitrary and unnecessarily conservative".[45] 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.

43 Not available.
44 CIE, *Review of consumption forecasts*, March 2006, p 21.
45 CIE, *Review of consumption forecasts*, March 2006, p 23.

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 draft findings on consumption forecasts for regulated rivers

The Tribunal's draft 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 draft findings on the consumption forecasts to be used to set prices for the entire 2006 determination period.

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

Region/river valley	State Water's submission		Tribunal's draft 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 draft 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 draft findings

Region/river valley	State Water's submission		Tribunal's draft 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 and 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 billing 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.

In the absence of better data, the Tribunal has used 2001 data provided by DNR for licence numbers and volumes for Town and Industry users on unregulated rivers.

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

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. DNR did not provide forecasts of this information in its submission, nor did it address entitlements and usage data. However, this information can be calculated from billing data. DNR has provided 2005 billing data, which the Tribunal has used to calculate entitlement volumes for groundwater licences.

Table 10.3 (earlier) sets out the Tribunal's draft findings on the parameters that have been used to set prices for the 2006 determination period.

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 draft 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 Figure 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:

- 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
- 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.

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 Figure 11.1.

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

The Tribunal's draft 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, as required by State Water's Operating Licence.

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.

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, in line with clause 10.2 of its Operating Licence. It also proposed that these ratios be uniform across all valleys.

In relation to the second part of this proposal, State Water noted that currently, the south of the state has high fixed charges while the north has higher usage charges. It put the view that the fixed versus usage ratio need not be standardised across NSW and there is scope to have different fixed/usage ratios in each valley.

It believes that clause 10.2 in its Operating licence can be interpreted in two different ways:

- apply the fixed to usage component charge ratio uniformly at a valley level, with fixed and usage charges set at levels to meet the ratio
- apply the fixed to usage component charge ratio at an overall business level, where ratios would differ from valley to valley.

While State Water believes that the second interpretation provides greater flexibility by enabling ratios to be tailored to the risk profile of each valley (ie, higher usage/fixed charges ratios in low risk valleys and vice versa), its Customer Service Committee indicated a preference for a uniform fixed/usage ratio across all valleys. For this reason, it proposed that the fixed to usage charge ratio be the same across all valleys.

Stakeholders expressed a range of views on State Water's proposal. Some irrigators considered that the proposal would provide a useful signal to conserve water. Others argued that a higher proportion of usage charges would result in highly variable revenue for State Water and could have implications for the maintenance of its infrastructure.

Environment groups commented that they support having as large a variable component as possible.

The Tribunal believes that clause 10.2 of State Water's Operating Licence does not make clear whether 50 per cent of revenues must be derived from usage charges, or whether the fixed/usage price ratio must be 50:50. Its interpretation is that the clause applies to revenues, although this could vary year-to-year based on water extracted.

The Tribunal also agrees with State Water that the requirements of clause 10.2 of the Operating Licence can be interpreted in two ways; uniformly across each valley or by applying the ratio across State Water's total revenue. It considers that both options for applying this clause have advantages and disadvantages, as set out in Table 11.1.

Table 11.1 Tribunal's assessment the two approaches for applying clause 10.2 of State Water's Operating Licence

Options	Advantages	Disadvantages
Apply the ratio uniformly across all valleys	All valleys with the exception of the Namoi will get reduced fixed charges by 1 July 2007 in the absence of any other increases.	Increases State Water's revenue risk
	Provides better price signals, although water is relatively small proportion of total farm costs	Does not take into account differences in the security of supply or infrastructure costs between valleys
	Prices better linked to farm activity	
Apply the ratio to State Water's total revenue	Potentially minimises State Water's revenue risk by allowing it to increase fixed cost component of charges in high risk valleys	In some valleys customers bear more supply risk (though a higher fixed charge component) than others
		Will result in different fixed to variable structures throughout the valleys

The Tribunal analysed the impact of changing the fixed to variable price structure on State Water's total revenue and the revenue variability (measured as security of supply) of each valley. The resulting higher usage charge is likely to increase State Water's revenue volatility; the Tribunal has considered this matter in section 4.1.2.

It also considered the impact on State Water's financial viability.

On balance, the Tribunal decided that clause 10.2 of State Water's Operating Licence should be applied uniformly across all valleys, consistent with State Water's proposal.

The Tribunal has also considered the impact on customers of moving from the current levels of revenue recovered from fixed charges to those required under clause 10.2 of State Water's Operating Licence. It has decided to move towards achieving State Water's Operating Licence requirements of recovering 40 per cent of expected revenue from fixed charges and 60 per cent from usage charges by 2009/10. The Tribunal notes, however, that the requirements in the Operating Licence will not be satisfied until 2009/10.

The Determination makes explicit that State Water may charge for the extraction of water from a regulated river by holders of a stock and domestic licence. The Tribunal understands that State Water has not in the past charged for such extractions.

11.3 Regulated rivers – DNR's entitlement versus usage charges

The Tribunal's draft 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 draft 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 11.2. The Tribunal notes that its assessment is also relevant to DNR's proposed restructure of its charges for unregulated river charges (section 11.7) and its groundwater tariffs (section 11.8).

Table 11.2 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.

11.4 Regulated rivers - premium for high security entitlements

For State Water, the Tribunal's draft 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 11.3.

For DNR, the Tribunal's draft finding is that the same unit entitlement charge should be charged to all water access licence holders on regulated rivers.

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 which water is required to be held in storage to deliver high security supplies.

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, a number of stakeholders, including Macquarie Generation and Macquarie River Food/Fibre, did not support State Water's proposal to multiply the ratio by a factor of two.

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 draft findings on these matters are discussed below.

11.4.1 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.

The Tribunal concluded that high security licence holders receive a higher level of service to general security licence holders.

11.4.2 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 draft 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.

11.4.3 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. 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.

However, the Tribunal does not believe there is sufficient basis to justify a multiplier of two to the water sharing plan rations and therefore rejects State Water's proposal of adjusting 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 subject to a minimum of 1.5 times. For this reason, its draft finding is that a minimum premium of 1.5 should apply.

Table 11.3 below compares the current high security premium ratios, State Water's proposed ratios, the calculated water sharing plan ratios and the Tribunal's draft finding.

Table 11.3 Tribunal's draft finding on high security to general security entitlement charge ratios for State Water

Valley	Existing ratios	SWC submission	WSP ratios	Tribunal's Draft Finding
Border Rivers	1.5	2.56	1.28	1.50
Gwydir	1.5	3.50	1.81	1.81
Namoi	1.5	2.22	1.11	1.50
Peel	2.3	13.46	6.73	6.73
Lachlan	1.5	3.76	2.45	2.45
Macquarie	1.3	4.94	1.88	1.88
Murrumbidgee	1.1	1.30	1.63	1.63
Murray	1.1	1.17	1.40	1.50
North Coast	1.4	2.00	1.00	1.50
Hunter	1.3	4.50	2.22	2.22
South Coast	1.3	2.00	1.00	1.50
Patterson	1.4	3.00	1.50	1.50

11.5 Regulated rivers - rebates to irrigation corporations

The Tribunal's draft decision for State Water is to provide a rebate to large irrigation companies and districts (ICD) against their total annual bills. In setting the rebate it has accepted CIE's recommended level of rebate.

The Tribunal's draft 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.

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.[46]

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

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.

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 believes 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 Tribunal has estimated rebates that should be given to the ICDs, as shown in Table 11.4. The Tribunal has also taken account that CIE stated 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. Accordingly, system wide benefits in the Murray valley only applies to Murray Irrigation.

Table 11.4 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	75	0	75
Murray Irrigation	550	1,072	1,622
Western Murray	23	0	23
West Corurgan	30	0	30
Moira	14	0	14
Eagle Creek	6	0	6
Murrumbidgee Irrigation	330	295	626
Coleambally Irrigation	141	126	268
Total	1,169	1,494	2,663

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

Currently, these costs are reflected as a percentage discount on the entitlement charge. The Tribunal 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 level of the rebate would be as shown in Table 11.4.

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.

11.6 Fish River Scheme price structure

The Tribunal's draft 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.

11.7 Unregulated rivers – tariff structure

The Tribunal's draft decision is that irrigators with entitlement volumes, except in the Far West, will pay an entitlement only charge. Licence holders with no entitlement volumes will continue to be charged area based charges. Licence holders in the Far West will continue to be charged area based charges until their new entitlement volumes have been allocated under the WMA.

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

The Tribunal's draft 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 fro such extractions.

11.7.1 Entitlements based charges for irrigators

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 two-part tariff for irrigators on unregulated rivers in the short term, given 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.

The Tribunal also notes that DNR has not addressed the minimum charge on irrigation licences in its submission. Presumably, the purpose of this charge is to ensure that it at least covers the cost of billing and other customer services. In this sense, a minimum charge is a substitute for a fixed charge per licence, which applies to groundwater licences. The Tribunal notes that abolishing this minimum charge will result in reductions in customer bills for a large number of smaller volume customers. Further, it will result in an inconsistency in the structure of water charges.

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.

For the reasons outlined above, the Tribunal's draft decision is that irrigators with entitlement volumes, except in the Far West, will pay an entitlement only charge. Licence holders with no entitlement volumes will continue to be charged area based charges. Licence holders in the Far West will continue to be charged area based charges until their new entitlement volumes have been allocated under the WMA.

The Tribunal notes that the introduction of a two-part tariff for 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 encourages DNR to expedite its metering program on unregulated rivers.

11.7.2 Fixed charges – town and industry

The Tribunal's draft 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.

11.8 Groundwater tariffs

The Tribunal's draft 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 2005/06, DNR generates about $4.1 million from its groundwater charges, an estimated 22 per cent of which comes from the base charge, 65 per cent from the entitlement charge and 13 per cent from the usage charge.

11.8.1 Base charge

Currently, irrigators pay an annual base charge of approximately $188 in managed areas and $81 in unmanaged areas. Revenue from these charges currently provides roughly 22 per cent of groundwater revenue.

The Tribunal's analysis of the arguments for and against adopting a single charge based on entitlement only for surface water is equally valid for groundwater (see Table 11.2). However, there are two additional arguments against this approach for groundwater that stem from the comparatively low utilisation rate of groundwater entitlements:

- DNR's argument that entitlements for groundwater, unlike surface water, are fully utilised. There is, therefore, no need to discourage full utilisation of currently unused water entitlements through a usage charge.
- Moving to a single fixed charge based on entitlements only could have very large impacts on licence holders who use comparatively small proportions of their entitlements. Conversely, those who use a high proportion of their entitlements will face far smaller increases, or even decreases, in their bills.

The Tribunal notes that abolishing the base charge will result in lower bills to a large number of small-volume customers and increase the bills of larger volume customers.

As set out in section 11.7, the Tribunal's draft decision is to abolish the minimum charge on unregulated charges. It considers that it would be inconsistent with unregulated charges to have a base charge for groundwater. Therefore, in the interests of simplifying the tariff structure and making tariff structures more consistent across water sources, the Tribunal's draft decision is to abolish the annual base charge by 2009/10.

The Tribunal has decided not to change any other aspect of the structure of groundwater prices. That is, charges for managed areas will comprise entitlement and usage charges, and charges for unmanaged areas will comprise an entitlement only charge given that unmanaged areas are not metered.

11.9 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.

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.

11.10 DNR large utilities licence fees

The Tribunal's draft 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.

11.11 DNR uniform charges across valleys

The Tribunal's draft 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.

12 PRICES FOR INDIVIDUAL SERVICES

As previous chapters have explained, the Tribunal sets prices by first making decisions on the 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 draft 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 draft 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 draft decisions on pricing

The Tribunal's draft decision is to increase State Water's prices annually by an average of 5.5 per cent above inflation over the 2006 determination period.

In making its pricing decisions for the 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. 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.[47]
- 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 in accordance with State Water's Operating Licence requirements.
- Set entitlement charges so that the high security to general security entitlement charge ratios shown in Table 11.3 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.

The Tribunal's decision is to increase DNR's prices annually by an average of 4.5 per cent above inflation over the 2006 determination period. Regulated river prices will increase annually on average by 0.7 per cent above inflation, unregulated river prices by 5.1 per cent and groundwater prices by 11.7 per cent.

47 The Tribunal has applied the cap by limiting the annualised real increases 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.
- 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).
- Placed a cap on average real annual price increases of 15 per cent. In addition, increases in annual bills for unregulated rivers and groundwater have been capped at 25 per cent in real terms (for a constant entitlement volume).
- Maintained constant nominal prices on unregulated rivers in over-recovering valleys, to minimise the potential need for large increases in the next determination period.

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.

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. Given the large increases required in some of the prices, the Tribunal favoured a glide path approach where either a single X-factor, or a nominal dollar amount, 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.
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.

12.3 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.[48] 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.

12.4 Draft pricing decision for regulated rivers

The Tribunal's draft decision is to set the maximum bulk water charges on regulated rivers shown in Tables 12.1 to 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.

48 These submissions were received on 10 October 2005, and are available on the IPART website.

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.[49] This will ensure that users pay the same effective entitlement price per ML of water.

This clause is 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 15 per cent to reduce the impact of the price increases on customers.[50]

49 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).

50 The 15 per cent increase is calculated by applying constant entitlement and usage volumes, with usage set at long-term average allocation levels.

Table 12.1 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 $/unit share)					
Border	4.00	4.21	4.29	4.36	4.42
Gwydir	4.25	4.50	4.61	4.70	4.79
Namoi	8.04	8.43	8.56	8.68	8.78
Peel	11.52	11.69	11.51	11.32	11.14
Lachlan	5.80	5.91	5.83	5.76	5.69
Macquarie	3.66	3.98	4.18	4.36	4.52
Far West		-	-	-	-
Murray	4.43	4.52	4.47	4.42	4.37
Murrumbidgee	3.28	2.90	2.45	2.03	1.62
North Coast	10.59	8.84	6.87	5.02	3.27
Hunter	6.61	7.33	7.81	8.25	8.66
South Coast	10.60	10.46	10.00	9.56	9.14
General Security Entitlement ($/ML of entitlement or $/unit share)					
Border	2.68	2.82	2.87	2.91	2.95
Gwydir	2.82	2.84	2.77	2.71	2.65
Namoi	5.36	5.62	5.71	5.78	5.85
Peel	5.05	4.24	3.33	2.47	1.66
Lachlan	3.86	3.53	3.11	2.70	2.32
Macquarie	2.81	2.77	2.64	2.52	2.40
Far West		-	-	-	-
Murray	4.02	3.81	3.50	3.20	2.91
Murrumbidgee	3.11	2.61	2.04	1.50	1.00
North Coast	8.14	6.70	5.11	3.60	2.18
Hunter	4.72	4.61	4.36	4.13	3.90
South Coast	8.15	7.78	7.19	6.63	6.10
Usage ($/ML)					
Border	3.11	3.88	4.51	5.10	5.65
Gwydir	3.29	4.40	5.34	6.22	7.04
Namoi	6.42	7.54	8.40	9.20	9.94
Peel	9.19	13.72	17.70	21.43	24.93
Lachlan	4.42	5.72	6.81	7.82	8.77
Macquarie	3.79	4.66	5.36	6.02	6.64
Far West		-	-	-	-
Murray	1.09	2.31	3.42	4.46	5.43
Murrumbidgee	0.82	1.26	1.64	2.00	2.34
North Coast	5.42	12.45	18.89	24.93	30.59
Hunter	4.70	7.22	9.44	11.53	13.48
South Coast	5.43	10.68	15.44	19.91	24.10

These charges will be adjusted for the annual movement in the CPI as set out in the determination.

Table 12.2 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 $/unit share)					
Border	2.23	1.45	1.37	1.30	1.22
Gwydir	1.38	0.87	0.79	0.72	0.66
Namoi	2.62	1.57	1.37	1.19	1.04
Peel	2.41	1.10	1.11	1.12	1.14
Lachlan	1.46	0.96	0.92	0.89	0.85
Macquarie	0.90	0.75	0.79	0.83	0.87
Far West	0.00	-	-	-	-
Murray	1.39	1.33	1.37	1.40	1.44
Murrumbidgee	1.00	0.97	0.96	0.94	0.93
North Coast	2.09	1.91	2.19	2.52	2.90
Hunter	3.30	2.01	1.67	1.38	1.14
South Coast	2.08	1.89	2.18	2.50	2.88
General Security Entitlement ($/ML of entitlement or $/unit share)					
Border	1.50	1.45	1.37	1.30	1.22
Gwydir	0.92	0.87	0.79	0.72	0.66
Namoi	1.75	1.57	1.37	1.19	1.04
Peel	1.06	1.10	1.11	1.12	1.14
Lachlan	0.97	0.96	0.92	0.89	0.85
Macquarie	0.70	0.75	0.79	0.83	0.87
Far West	0.00	-	-	-	-
Murray	1.26	1.33	1.37	1.40	1.44
Murrumbidgee	0.95	0.97	0.96	0.94	0.93
North Coast	1.61	1.91	2.19	2.52	2.90
Hunter	2.36	2.01	1.67	1.38	1.14
South Coast	1.60	1.89	2.18	2.50	2.88
Usage ($/ML of entitlement or $/unit share)					
Border	1.74	1.69	1.60	1.51	1.42
Gwydir	1.08	1.01	0.92	0.84	0.77
Namoi	2.09	1.88	1.63	1.42	1.24
Peel	1.92	2.00	2.02	2.05	2.07
Lachlan	1.12	1.10	1.06	1.02	0.98
Macquarie	0.94	1.02	1.07	1.12	1.18
Far West	0.00	-	-	-	-
Murray	0.34	0.36	0.37	0.38	0.39
Murrumbidgee	0.25	0.25	0.25	0.24	0.24
North Coast	1.08	1.28	1.47	1.69	1.95
Hunter	2.35	2.00	1.66	1.37	1.13
South Coast	1.07	1.27	1.46	1.67	1.93

These charges will be adjusted for the annual movement in the CPI as set out in the determination.

Table 12.3 State Water rebates for irrigation customer districts ($'000, Real 2006/07)

Valley	Total annual rebate
Jemalong	**75**
Murray Irrigation	**1,622**
Western Murray	**23**
West Corurgan	**30**
Moira	**14**
Eagle Creek	**6**
Murrumbidgee Irrigation	**626**
Coleambally Irrigation	**268**
Total	**2,663**

These rebates will be adjusted for the annual movement in the CPI as set out in the determination.

Table 12.4 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 Draft pricing decision for Fish River Scheme

The Tribunal's draft decision is to set the maximum Fish River Scheme shown in Table 12.5 below.

Table 12.5 Maximum total charges for the Fish River Scheme (Nominal $)

Details	2005/06	2006/07	2007/08	2008/09	2009/10
Fixed Access Charge					
Bulk Unfiltered Water					
Delta Electricity/SCA/Oberon Council (c/kL)	20.5	21.3	22.2	23.1	24.0
Individual Minor Customers (c/kL)	25.6	26.6	27.7	28.8	29.9
Bulk Filtered Water					
Lithgow Council (c/kL)	30.7	31.9	33.2	34.5	35.9
Individual Minor Customers (c/kL)	35.8	37.2	38.7	40.3	41.9
Use Rate up to MAQ					
Bulk Unfiltered Water					
Delta Electricity/SCA/Oberon Council (c/kL)	23.0	23.9	24.9	25.9	26.9
Individual Minor Customers (c/kL)	46.1	47.9	49.9	51.9	53.9
Bulk Filtered Water					
Lithgow Council (c/kL)	33.3	34.6	36.0	37.5	39.0
Individual Minor Customers (c/kL)	56.3	58.6	60.9	63.3	65.9
Use rate above MAQ					
Bulk Unfiltered Water					
Delta Electricity/SCA/Oberon Council (c/kL)	43.5	45.2	47.0	48.9	50.9
Individual Minor Customers (c/kL)	71.7	74.6	77.6	80.7	83.9
Bulk Filtered Water					
Lithgow Council (c/kL)	64.0	66.6	69.2	72.0	74.9
Individual Minor Customers (c/kL)	92.2	95.9	99.7	103.7	107.9

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+0.9 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 its 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 that 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 draft decision is to accept State Water's proposed charges for the Fish River Scheme.

12.6 Draft pricing decision for unregulated rivers

The Tribunal's draft decision is to set the maximum bulk water charges on unregulated rivers shown in Tables 12.6 to 12.11 below. Where entitlements have been converted to a unit share under the Water Management Act, a conversion methodology is to be applied.

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.[51] This will ensure that users pay the same effective entitlement price per ML of water.

This clause is 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

[51] 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).

change. The risk sharing arrangements for these changes are already dealt with under section 87AA of the *Water Management Act 2000*.

Table 12.6 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**	**$/ha**
Lachlan	13.57	14.52	15.06	15.63	16.22
Macquarie	13.57	14.52	15.06	15.63	16.22
Far West	13.57	16.09	18.50	21.27	24.46
Murray	7.72	9.16	10.53	12.11	13.92
North Coast	13.57	16.09	18.50	21.27	24.46
Hunter	11.75	13.33	14.67	16.14	17.76
South Coast	13.57	14.36	14.75	15.14	15.55
Entitlement charge	**$/ML**	**$/ML**	**$/ML**	**$/ML**	**$/ML**
Lachlan	3.07	4.07	4.22	4.38	4.55
Macquarie	4.52	4.07	4.22	4.38	4.55
Far West	2.07	3.43	3.95	4.54	5.22
Murray	3.09	3.05	3.50	4.03	4.63
North Coast	4.10	4.08	4.70	5.40	6.21
Hunter	2.65	3.14	3.46	3.80	4.19
South Coast	3.00	3.07	3.15	3.24	3.33

The entitlement charges in 2005/06 are charges before recalculation using actual area-to-volume (ML/ha) conversion ratios (see section 12.6.1).
These charges will be adjusted for the annual movement in the CPI as set out in the determination.

For the reasons discussed in section 12.6.2, for some valleys charges have been keep constant in nominal terms. The charges for these valleys are listed in Table 12.7.

Table 12.7 Maximum charges for unregulated rivers (Nominal $)

Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10
Area based charge	**$/ha**	**$/ha**	**$/ha**	**$/ha**	**$/ha**
Border	12.26	12.26	12.26	12.26	12.26
Gwydir	12.26	12.26	12.26	12.26	12.26
Namoi	12.26	12.26	12.26	12.26	12.26
Peel	12.26	12.26	12.26	12.26	12.26
Murrumbidgee	13.57	13.57	13.57	13.57	13.57
Entitlement charge	**$/ML**	**$/ML**	**$/ML**	**$/ML**	**$/ML**
Border	3.82	3.00	3.00	3.00	3.00
Gwydir	3.82	3.00	3.00	3.00	3.00
Namoi	3.82	3.00	3.00	3.00	3.00
Peel	3.82	3.00	3.00	3.00	3.00
Murrumbidgee	5.43	6.44	6.44	6.44	6.44

The entitlement charges in 2005/06 are charges before recalculation using actual area-to-volume (ML/ha) conversion ratios (see section 12.6.1).

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.[52]

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).

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 is 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.[53]

The Tribunal has also decided to keep tariffs in the Barwon region and in the Murrumbidgee valley unchanged in nominal terms, even though projected revenue over the 2006 determination period slightly exceeds costs. The reason for this is to limit the variability of tariffs over determination periods, given the revolving nature of water resource management expenditure that may result in the need for tariff increases in the next determination 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 25 per cent in real terms (for a constant entitlement volume).

12.6.3 Draft pricing decision for town and industry customers without entitlement volumes

The Tribunal's draft decision is to set the maximum charges to town and industry customers with and without entitlement volumes shown in Tables 12.8 to 12.11 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 usage charge that will apply prior to the allocation of an entitlement volume is shown in Tables 12.10 and 12.11.

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52 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.

53 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.

Table 12.8 Entitlement and usage tariff for town and industry customers on unregulated rivers with entitlements (Real 2006/07$)

Region/river valley	2005/06 $/ML (nominal)	2006/07 $/ML	2007/08 $/ML	2008/09 $/ML	2009/10 $/ML
Entitlement					
Lachlan	1.85	2.45	2.54	2.64	2.74
Macquarie	2.71	2.45	2.54	2.64	2.74
Far West	1.26	2.09	2.40	2.76	3.18
Murray	1.85	1.83	2.10	2.42	2.78
North Coast	2.47	2.46	2.83	3.26	3.74
Hunter	1.60	1.89	2.08	2.29	2.52
South Coast	1.80	1.84	1.89	1.94	1.99
Usage					
Lachlan	1.24	1.62	1.68	1.74	1.81
Macquarie	1.80	1.62	1.68	1.74	1.81
Far West	0.84	1.34	1.54	1.78	2.04
Murray	1.24	1.22	1.40	1.61	1.85
North Coast	1.65	1.62	1.87	2.15	2.47
Hunter	1.07	1.25	1.38	1.52	1.67
South Coast	1.20	1.23	1.26	1.30	1.33

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).
These charges will be adjusted for the annual movement in the CPI as set out in the determination.

For the reasons discussed in section 12.6.2, for some valleys charges have been keep constant in nominal terms. The charges for these valleys are listed in Table 12.9.

Table 12.9 Entitlement and usage tariff for town and industry customers on unregulated rivers with entitlements (Nominal $)

Region/river valley	2005/06 $/ML	2006/07 $/ML	2007/08 $/ML	2008/09 $/ML	2009/10 $/ML
Entitlement					
Border	2.30	1.81	1.81	1.81	1.81
Gwydir	2.30	1.81	1.81	1.81	1.81
Namoi	2.30	1.81	1.81	1.81	1.81
Peel	2.30	1.81	1.81	1.81	1.81
Murrumbidgee	3.26	3.86	3.86	3.86	3.86
Usage					
Border	1.53	1.19	1.19	1.19	1.19
Gwydir	1.53	1.19	1.19	1.19	1.19
Namoi	1.53	1.19	1.19	1.19	1.19
Peel	1.53	1.19	1.19	1.19	1.19
Murrumbidgee	2.16	2.57	2.57	2.57	2.57

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).

Table 12.10 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
Lachlan	1.88	2.01	2.08	2.16	2.24
Macquarie	1.88	2.01	2.08	2.16	2.24
Far West	1.88	2.23	2.56	2.94	3.38
Murray	0.97	1.15	1.32	1.52	1.74
North Coast	1.88	2.23	2.56	2.94	3.38
Hunter	1.63	1.85	2.04	2.24	2.46
South Coast	1.88	1.99	2.04	2.09	2.15

These charges will be adjusted for the annual movement in the CPI as set out in the determination.

For the reasons discussed in section 12.6.2, for some valleys charges have been keep constant in nominal terms. The charges for these valleys are listed in Table 12.11.

Table 12.11 Usage tariff for town and industry customers on unregulated rivers with no entitlements (Nominal $)

Region/river valley	2005/06 $/ML	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
Murrumbidgee	1.88	1.88	1.88	1.88	1.88

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 an entitlement charge set at 60 per cent of the entitlement only charge for irrigators, and a usage charge which is set at 40 per cent of the relevant valley irrigation charge.

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 25 per cent per year in real terms (for a constant usage volume greater than zero).[54]

[54] 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.

12.7 Draft pricing decision for groundwater services

The Tribunal's draft decision is to set the maximum charges for groundwater services shown in Table 12.12 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 DNR's revenue remains unchanged.

The conversion ratio to be applied to the entitlement charge in a valley is designed to maintain DNR's revenue after the introduction of WSPs. The effect of this conversion ratio 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. Only the bill of a licence holder who has been converted at the valley average will remain unchanged. The Tribunal has however decided that no bill will be allowed to increase by more than 25 per cent per year in real terms. The conversion ratio is set out below.

$$CR = \frac{(E \quad x \quad F)}{G}$$

Where:

CR – conversion ratio for a relevant water source or river valley

E - total Entitlement Volume (expressed in megalitres) of all Licence holders in a relevant water source or river valley immediately before the introduction of the Water Sharing Plan

F – megalitre per unit share for the Ground Water source

G - total Entitlement Volume (expressed in megalitres) of all WMA Licence holders in a relevant water source of river valley immediately after the introduction of the Water Sharing Plan (including Entitlement Volumes on any supplementary licences for extraction of Ground Water)

Table 12.12 Maximum ground water prices (Real 2006/07$)

Valley	2005/06 (nominal)	2006/07	2007/08	2008/09	2009/10
Base charges ($/property)					
Managed areas	187.72	156.77	114.44	62.94	-
Unmanaged areas	81.48	68.04	49.67	27.32	-
Entitlement charge for managed and unmanaged areas ($/ML)					
Border	0.85	1.12	1.43	1.78	2.18
Gwydir	0.85	1.12	1.43	1.78	2.18
Namoi	0.85	1.12	1.43	1.78	2.18
Peel	0.85	1.12	1.43	1.78	2.18
Lachlan	1.37	1.72	2.09	2.50	2.94
Macquarie	1.37	1.72	2.09	2.50	2.94
Far West	1.51	2.03	2.66	3.40	4.27
Murray	1.36	1.48	1.56	1.64	1.72
Murrumbidgee	0.84	0.99	1.13	1.27	1.41
North Coast	1.51	2.03	2.66	3.40	4.27
Hunter	1.51	2.03	2.66	3.40	4.27
South Coast	1.51	2.03	2.66	3.40	4.27
Usage ($/ML)					
Border	0.43	0.56	0.71	0.89	1.09
Gwydir	0.43	0.56	0.71	0.89	1.09
Namoi	0.43	0.56	0.71	0.89	1.09
Peel	0.43	0.56	0.71	0.89	1.09
Lachlan	0.71	0.89	1.08	1.29	1.52
Macquarie	0.71	0.89	1.08	1.29	1.52
Far West	0.75	1.02	1.33	1.70	2.14
Murray	0.69	0.75	0.79	0.83	0.87
Murrumbidgee	0.42	0.49	0.56	0.63	0.70
North Coast	0.75	1.02	1.33	1.70	2.14
Hunter	0.75	1.02	1.33	1.70	2.14
South Coast	0.75	1.02	1.33	1.70	2.14

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

Entitlement volumes are expected to be dramatically reduced 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 understands that usage volumes will not be significantly affected, at least initially when a supplementary licence will be available to a licence holder whose historical usage volume exceeds the allocated entitlement volume. The Tribunal believes that if a customer's usage is not affected by the withdrawal of entitlement volumes, then ideally their bill should remain unchanged (ceteris paribus). Also, if usage volumes are unchanged then DNR's revenue should remain unchanged. For this to happen, the price per

ML of entitlement needs to rise in proportion to the volume withdrawn. The Tribunal has considered a number of options that take account of these matters.

The Tribunal believes that the best option is to set tariffs on the basis of 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 believes that this option will result in irrigators on average being charged the same total bill before and after conversion (assuming constant usage), and that DNR's will recover its total revenue. However, the bills of individual licence holders may increase substantially, or may fall, depending on individual licence reductions. The potential for large increases in bills is mitigated by Tribunal's maximum allowed annual real increase of 25 per cent (for a constant usage volume).

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 -1 per cent and 8 per cent respectively.[55]

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.[56]

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 25 per cent per year in real terms (for a constant entitlement volume and, in a managed area, usage volume).

12.8 Draft pricing decision for the Sydney Catchment Authority and Hunter Water Corporation (Hunter Water)

The Tribunal's draft decision is to set the maximum charges for Sydney Catchment Authority and Hunter Water shown in Table 12.13 below.

55 A 1 per cent real decrease in tariffs translates into a nominal increase of about 2 per cent if an inflation rate of 3 per cent is assumed.

56 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 -1 per cent Murray and 8 per cent in the Murrumbidgee Valleys), assuming constant volumes and number of licences.

Table 12.13 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	Entitlement $/ML	Usage $/ML	Entitlement $/ML	Usage $/ML	Entitlement $/ML	Usage $/ML	Entitlement $/ML	Usage $/ML
Hunter Water Corporation – Unregulated Rivers	2.67	n/a	3.14	n/a	3.46	n/a	3.81	n/a	4.19
Hunter Water Corporation – Groundwater	2.26	n/a	3.05	n/a	3.99	n/a	5.10	n/a	6.41
Sydney Catchment Authority with no entitlement volume	3.00	n/a	3.07	n/a	3.15	n/a	3.24	n/a	3.32
Sydney Catchment Authority with entitlement volume	n/a	1.84	1.23	1.89	1.26	1.94	1.30	1.99	1.33

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) are 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 draft 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 draft 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 Draft pricing decision related to Yanco Creek System Natural Resource Management Plan (NRMP)

The Tribunal's draft 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 megalire 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 draft 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 draft decision is to set the maximum charges for transaction fees shown in Schedule 4 of the Draft 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 to $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 draft decision is to set State Water's temporary transfer fee with a fixed charge of $25 and a variable charge of $1.00/ML with a maximum charge of $275.00 per transfer and indexed by movements in CPI each year.

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 cost of these transfers. The current fee is a fixed charge of $25 and a variable charge of $1/ML transferred, with a maximum charge of $75.00.

State Water submits that the cost of administering temporary transfers was $350,000 in 2004/05. State Water has asked that the Tribunal set the fixed charge at $25 and the variable charge at $1.00/ML, but increase the maximum charge to $275. This would result in average revenue per transfer of $136.77 compared with the average revenue under full cost recovery of $177.66.

The Tribunal's draft finding is to accept State Water's proposal.

13 EXPECTED OUTCOMES OF PRICING DECISIONS

In finalising its draft 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.

The Tribunal is satisfied that the implications of its draft 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 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 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 draft 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 draft prices, assuming average water consumption over the 2006 determination period. For State Water, this total revenue is $45.6 million in 2006/07 rising to $51.0 million in 2009/10, which represents an increase of 12 per cent over the determination period. For DNR, this total revenue is $23.5 million in 2006/07 and $27.5 million in 2009/10, which is an increase of 17 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 towards the notional revenue requirement.

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	**45.6**	**47.6**	**49.4**	**51.0**	**193.5**
DNR	**23.5**	**24.7**	**26.0**	**27.5**	**101.8**
- regulated	10.8	10.9	11.1	11.3	44.2
- unregulated	7.6	8.0	8.5	9.1	33.3
- groundwater	5.1	5.7	6.4	7.1	24.3
Total	**69.1**	**72.2**	**75.4**	**78.6**	**295.3**

Totals may not add due to rounding.

The increase in the 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 40 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 4.6 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 eleven 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 25 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 draft determination, the draft 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 84 per cent in 2006/07 to 96 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 91 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).

Table 13.2 Tribunal's draft 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**
Border	62%	100%	117%	100%
Gwydir	75%	100%	129%	100%
Namoi	83%	100%	147%	100%
Peel	45%	55%	50%	100%
Lachlan	95%	100%	129%	100%
Macquarie	84%	100%	100%	100%
Far West				
Murray	80%	100%	67%	100%
Murrumbidgee	127%	100%	90%	100%
North Coast	9%	7%	7%	11%
Hunter	55%	80%	171%	100%
South Coast	25%	34%	45%	70%
Fish River Scheme	97%	101%		
Total	**84%**	**96%**	**91%**	**98%**

The draft prices 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 to an average of 15 per cent per annum over the determination period. In addition, there is 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 55 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 price increases, these gains will mean that the cost recovery level will reach 80 per cent by 2009/10. DNR will over-recover its costs in this valley in 2006/07, because its forecast costs for this year are significantly less than in 2005/06. This means that prices will fall over the determination period, so that the cost recovery level returns to 100 per cent by 2009/10.

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 draft finding on percentage of unregulated and ground water costs recovered by valley (%)

	Unregulated		Ground water	
Region/river valley	**2006/07**	**2009/10**	**2006/07**	**2009/10**
Barwon region (Border, Gwydir, Namoi, Peel)	116%	107%	57%	87%
Central West (Lachlan, Macquarie)	104%	100%	54%	95%
Far West	53%	79%	Na	Na
Murray	54%	73%	94%	100%
Murrumbidgee	137%	113%	75%	100%
North Coast	47%	67%	14%	17%
Hunter	72%	100%	48%	89%
South Coast	95%	100%	16%	18%
Total	**79%**	**90%**	**49%**	**74%**

Note: Separate entitlement and usages volumes for groundwater in the Far West were not available to the Tribunal in time for the draft report.

For unregulated rivers, the overall level of cost recovery will increase from 79 per cent in 2006/07 to 90 per cent by 2009/10. 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 and the Murrumbidgee valley,

prices will over-recover costs, due to the Tribunal's decision to maintain prices in nominal terms even though expenditure during the determination period is expected to be low.

For ground water sources, the overall level of cost recovery will increase from 49 per cent in 2006/07 to 74 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 25 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.

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.[57]

13.3 Implications for customers

The maximum prices proposed 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 proposed price increases represent a fair balance between the interests of customers, the agencies and the broader community.

In reaching its decisions, the Tribunal considered 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.[58] The sections below summarised the findings of this study, then discuss the implications of the Tribunal's proposed maximum prices for customers who use regulated water, unregulated water and ground water.

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57 National Water Commission, *2005 National Competition Policy Assessment of Progress*, March 2006, p 2.45.

58 ABARE, *Impact of bulk water prices on farm profitability*, April 2006, can be obtained from the Tribunal's website www.ipart.nsw.gov.au

13.3.1 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 conducted face-to-face interviews with farmers to collect the required data, and crosschecked this data with the farmers' tax statements. This has provided robust information to help the Tribunal assess the potential impact on customers of its pricing decisions.

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.[59]

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 0.6 to 3.4 per cent of total farm costs. If prices increased to the 2009/10 level determined by the Tribunal in this draft decision (and assuming all other factors remain unchanged), bulk water costs would represent between 0.7 to 5.1 per cent of the total farm costs.

[59] 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	5.1
- Dairy	0.9	2.0
Murrumbidgee		
- Crops	2.0	2.4
- Wine grapes	0.6	0.7
Lachlan – Crops	2.9	4.0
Namoi – Cotton	3.4	4.3
Peel – crops	2.1	3.8
Bega – dairy	1.1	2.4
Hunter – dairy	1.7	2.6

Notes:
The 2009/10 prices determined by the Tribunal.
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.[60] ABARE's results also show that the cotton industry in the Namoi valley can be considered to be profitable, and that the dairy industry in the Murray and Bega valleys is also 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).[61] 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.[62]

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

60 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.

61 Source: Murray Irrigation's Water Exchange website from the following link, http://www.murrayirrigation.com.au/content.php?p=5&s=watexch

62 This information can be obtained through the following links http://www.wma.dipnr.nsw.gov.au/wma/AllocationSearch.jsp?selectedRegister=Allocation

availability of water). While an increase in bulk water costs will have a minor impact on farm profits, the Tribunal notes that it is not a key factor in determining whether farms remain financially viable businesses in the long term.

13.3.2 Implications for regulated water users

Bills for most customers on regulated rivers will increase over the determination period. However, the implications of the draft 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 draft 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	4.57	2.41	-47%	4.24	76%	4.37	3%
GS Entitlement ($/ML or unit)	4.02	4.14	2.19	-47%	3.84	76%	2.91	-24%
Usage ($/ML or unit)	1.09	1.12	2.79	148%	4.91	76%	5.43	11%
Peel								
HS Entitlement ($/ML or unit)	11.52	11.88	6.56	-45%	7.94	21%	11.14	40%
GS Entitlement ($/ML or unit)	5.05	5.21	2.88	-45%	3.48	21%	1.66	-52%
Usage ($/ML or unit)	9.19	9.47	20.59	117%	24.93	21%	24.93	0%

Notes:

2005/06 prices ($ Real 2006/07) are the current prices increased by an inflation rate of 3.1 per cent.
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 specified by State Water's Operating Licence (see 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.[63]

To meet the requirements of State Water's Operating Licence, the 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

63 This is based on consumption equivalent to the long term average usage for the valley.

to maintain the same valley revenue.[64] This explains the reason for the relatively large increase in the usage component of the charge.

The relatively larger increase in the usage charge in the Murray (148 per cent) compared to the Peel (117 per cent) is due to the fact that 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 draft 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, the costs to be recovered from users have increased substantially, reflecting the higher levels of costs attributed to the MDBC. After the changes to prices to reflect State Water's Operating Licence requirements, bulk water charges in this valley need to increase by 76 per cent to recover the higher level of costs. In the Peel valley, the costs to be recovered from users have increased by a smaller amount, so bulk water charges only need to increase by 21 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.

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64 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.

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	1.31	-8%	1.88	43%	1.44	-24%
GS Entitlement ($/ML or unit)	1.26	1.30	1.31	1%	1.88	43%	1.44	-24%
Usage ($/ML or unit)	0.34	0.35	0.35	1%	0.50	43%	0.39	-24%
Peel								
HS Entitlement ($/ML or unit)	2.41	2.48	1.41	-43%	1.14	-20%	1.14	0%
GS Entitlement ($/ML or unit)	1.06	1.09	1.41	30%	1.14	-20%	1.14	0%
Usage ($/ML or unit)	1.92	1.98	2.57	30%	2.07	-20%	2.07	0%

Notes:

2005/06 prices are the current prices increased by an inflation rate of 3.1 per cent.
The percentage change in this table illustrates the change from the 2005/06 price to the 2009/10 price.
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 11.4) and the resulting fall in the high security entitlement charge. As a result of this change, the General Security entitlement and usage prices have increased so as 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 43 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 20 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. 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.

High security customers

A typical bill for a customer with a High Security entitlement of 1,000ML per year who uses their full entitlement will change in real terms by between -7 per cent and +96 per cent over the period 2005/06 to 2009/10 (Table 13.7). The maximum increase of 96 per cent translates to an annualised real increase of 18 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. In the Murrumbidgee valley, the reduction in the bill reflects the reduction in the level of costs to be recovered from users.

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	11,427	11,239	11,770	12,260	12,713	11%
Gwydir	10,308	10,776	11,661	12,489	13,263	29%
Namoi	19,765	19,422	19,966	20,493	20,999	6%
Peel	25,814	28,517	32,347	35,927	39,268	52%
Lachlan	13,197	13,694	14,625	15,489	16,287	23%
Macquarie	9,581	10,417	11,403	12,331	13,205	38%
Far West	-	-	-	-	-	
Murray	7,475	8,513	9,616	10,650	11,619	55%
Murrumbidgee	5,515	5,379	5,296	5,214	5,132	-7%
North Coast	19,774	24,469	29,422	34,159	38,702	96%
Hunter	17,490	18,565	20,574	22,527	24,412	40%
South Coast	19,772	24,290	29,076	33,656	38,051	92%

Notes:

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

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 -28 per cent and +75 per cent over the period 2005/06 to 2009/10 (Table 13.8). The maximum increase of 75 per cent translates to an annualised real increase of 15 per cent. [65]

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 Murrumbidgee valley where the total costs to be recovered from users has reduced substantially.

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	7,305	7,616	7,903	8,168	8,411	15%
Gwydir	6,558	6,953	7,324	7,671	7,995	22%
Namoi	12,595	12,845	13,098	13,351	13,600	8%
Peel	13,170	14,776	16,278	17,680	18,987	44%
Lachlan	8,407	8,587	8,749	8,894	9,022	7%
Macquarie	6,542	6,928	7,292	7,637	7,963	22%
Far West	-	-	-	-	-	
Murray	6,326	6,742	7,131	7,496	7,837	24%
Murrumbidgee	4,848	4,477	4,125	3,791	3,473	-28%
North Coast	14,070	16,843	19,512	22,092	24,599	75%
Hunter	11,661	12,155	12,688	13,243	13,808	18%
South Coast	14,068	16,840	19,508	22,087	24,591	75%

Notes:

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

[65] 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 -45 per cent and +25 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	5,305	5,386	5,460	5,525	5,583	5%
Gwydir	4,758	4,789	4,819	4,845	4,869	2%
Namoi	9,086	9,079	9,085	9,102	9,127	0%
Peel	8,587	8,487	8,387	8,288	8,190	-5%
Lachlan	6,124	5,858	5,603	5,358	5,122	-16%
Macquarie	4,591	4,656	4,718	4,779	4,838	5%
Far West	-	-	-	-	-	
Murray	5,738	5,677	5,618	5,563	5,510	-4%
Murrumbidgee	4,408	3,875	3,370	2,893	2,441	-45%
North Coast	11,390	11,353	11,369	11,444	11,585	2%
Hunter	8,753	8,467	8,248	8,085	7,964	-9%
South Coast	11,388	12,064	12,749	13,451	14,180	25%
Fish River Scheme						

Notes:

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

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 an increase in their bills between 2005/06 and 2009/10 despite the fact that bills for other customers in the Murrumbidgee valley fall (as described in the previous sections above). 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 2006/07 onwards, these ICDs will be charged for these licences, which will increase their bills between 2005/06 and 2006/07.[66]

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	708	765	788	809	827	17%
Murray Irrigation	6,668	8,671	9,784	10,869	11,931	79%
Western Murray Irrn	359	482	555	624	689	92%
West Corurgan	383	533	593	650	704	84%
Moira	197	261	290	317	343	74%
Eagle Ck	93	119	132	145	157	70%
Murrumbidgee Irrn	5,084	6,318	6,113	5,916	5,729	13%
Colleambally Irrn	2,004	2,638	2,537	2,441	2,350	17%

Notes:

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.

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.

13.3.3 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 face area-based charges or volumetric entitlement charges.

[66] The Tribunal has decided that the entitlement volumes associated with the conveyance licences will be charged at the general security price.

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 draft 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. 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 (Real 2006/07$)

	Total bill					
Region/river valley	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total real increase**
Lachlan	699	726	753	782	811	16%
Macquarie	699	726	753	782	811	16%
Far West	699	804	925	1,064	1,223	75%
Murray	398	458	526	605	696	75%
North Coast	699	804	925	1,064	1,223	75%
Hunter	605	666	733	807	888	47%
South Coast	699	718	737	757	777	11%

In the Barwon region and Murrumbidgee valley, bills for irrigation customers will not increase. This reflects the Tribunal's draft decision to keep the tariffs unchanged (in nominal terms) in these valleys, as discussed in Chapter 12. The bills for these customers are presented in Table 13.12 below (expressed in nominal dollars).

Table 13.12 Examples of bills for irrigators on unregulated rivers, 50 ha licences converted at valley average (nominal $)

	Total bill					
Region/river valley	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total nominal increase**
Barwon	613	613	613	613	613	0%
Murrumbidgee	678	678	678	678	678	0%

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 25 per cent in real terms (for a constant entitlement volume) resulting in a maximum bill increase of 144 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) (Real 2006/07$)

	Total bill					
Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Barwon	632	790	988	1,235	1,369	117%
Lachlan	699	874	1,093	1,366	1,707	144%
Macquarie	699	874	1,093	1,366	1,707	144%
Far West	699	874	1,093	1,366	1,707	144%
Murray	398	498	622	777	972	144%
Murrumbidgee	699	874	1,093	1,366	1,707	144%
North Coast	699	874	1,093	1,366	1,707	144%
Hunter	605	757	946	1,183	1,478	144%
South Coast	699	874	1,093	1,366	1,663	138%
Fish River Scheme						

Notes:

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 13.14 below. These customers will face a substantially lower bill compared to 2005/06.

Table 13.14 Example bills for irrigators on unregulated rivers, 50 ha licences converted at 1.5ML/ha (low conversion ratio) (Real 2006/07$)

	Total bill					
Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10	Total real increase
Lachlan	699	305	317	329	341	-51%
Macquarie	699	305	317	329	341	-51%
Far West	699	257	296	340	392	-44%
Murray	398	229	263	302	348	-13%
North Coast	699	306	352	405	466	-33%
Hunter	605	236	259	285	314	-48%
South Coast	699	230	237	243	249	-64%

However, customers in the Barwon region and Murrumbidgee valley will face an even lower bill compared to 2005/06 as indicated in Table 13.15 below. This reflects the Tribunal's decision to keep tariffs unchanged in nominal terms in these valleys.

Table 13.15 Examples of bills for irrigators on unregulated rivers, 50 ha licences converted at 1.5ML/ha (low conversion ratio) (nominal $)

	Total bill					
Region/river valley	2005/06	2006/07	2007/08	2008/09	2009/10	Total nominal increase
Barwon	613	225	225	225	225	-63%
Murrumbidgee	678	483	483	483	483	-29%

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 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 25 per cent in real terms (for a constant usage volume) resulting in a maximum bill increase of 144 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	522	652	787	763	740	42%
Lachlan	558	698	872	1,091	1,228	120%
Macquarie	558	698	872	1,091	1,228	120%
Far West	558	698	872	1,091	1,363	144%
Murray	347	434	542	678	848	144%
Murrumbidgee	558	698	872	1,091	1,363	144%
North Coast	558	698	872	1,091	1,363	144%
Hunter	501	626	783	979	1,131	126%
South Coast	558	698	852	874	898	61%

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 increase in bills faced by these customers 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 in all valleys except the Lachlan, Far West, Murrumbidgee and Hunter.

Table 13.17 Examples of bills for town and industry on unregulated rivers currently on the two-part tariff (2006/07$)

	Total bill					
Region/river valley	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**Total real increase**
Lachlan	860	1,076	1,140	1,183	1,228	43%
Macquarie	1,255	1,099	1,140	1,183	1,228	-2%
Far West	585	731	914	1,142	1,413	142%
Murray	860	823	946	1,088	1,251	45%
North Coast	1,148	1,104	1,269	1,459	1,678	46%
Hunter	741	848	934	1,028	1,131	53%
South Coast	835	829	852	874	898	7%

Note: The maximum permitted increase in bills is 25 per cent per year.
Entitlement 300ML, usage 225ML.

In the Barwon region and Murrumbidgee valley, bills for town and industry customers will not increase. This reflects the Tribunal's draft decision to keep the tariffs unchanged (in nominal terms) in these valleys, as indicated in Tables 12.9 and 12.11. The bills for those town and industry customers currently on a two-part tariff are presented in Table 13.18 below (expressed in nominal dollars). The bills for these customers remain constant (in nominal terms) from 2006/07 to 2009/10. However, in 2005/06 these bills are substantially different compared to 2006/07. This reflects the Tribunal's decision to recalculate the volumetric entitlement based charges for irrigation customers, as discussed above. This change will result in a 19 per cent increase in the bill for customers in the Murrumbidgee valley and a 22 per cent reduction in bills for those customers in the Barwon region.

Table 13.18 Examples of bills for town and industry on unregulated rivers currently on the two-part tariff (nominal $)

Region/river valley	Total bill 2005/06	2006/07	2007/08	2008/09	2009/10	Total nominal increase
Barwon	1,035	811	811	811	811	-22%
Murrumbidgee	1,463	1,738	1,738	1,738	1,738	19%

13.3.4 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. As a consequence, the bills of small volume customers will decrease while those of large volume customers will increase. However, the bills of large volume customers will increase by no more than 25 per cent per year in real terms because of the cap placed by the Tribunal on bill increases.

Tables 13.19, 13.20 and 13.21 show the bills for ground water entitlements of 200ML, 2,000ML 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.[67] For example, a large proportion of the licences in the coastal valleys have small entitlements, and around 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 the other valleys.

In contrast, there are relatively few small volume licences in the Lachlan valley, and base charges account for only about 10 per cent of total revenue. While average tariffs in the coastal and the Lachlan valleys all increase at a rate of no more than 15 per cent per year, the increases in entitlement and usage charges in the Lachlan valley, and hence the bills of medium and large volume customers, are far smaller than in the coastal valleys.

[67] 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 change, the entitlement charge and the usage charge.

Table 13.19 Example groundwater bills for 200ML entitlement 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	414	437	471	507	544	32%
Lachlan	549	589	640	692	741	35%
Macquarie	549	589	640	692	741	35%
Far West	582	665	779	914	1,068	84%
Murray	545	528	506	475	431	-21%
Murrumbidgee	410	404	395	379	353	-14%
Unmanaged						
Barwon	260	292	335	383	435	67%
Lachlan	367	412	468	527	589	61%
Macquarie	367	412	468	527	589	61%
Far West	395	474	581	708	854	116%
Murray	364	364	362	356	344	-6%
Murrumbidgee	258	266	275	281	283	10%
North Coast	395	474	581	708	854	116%
Hunter	395	474	581	708	854	116%
South Coast	395	474	581	708	854	116%

The reduction in the bill for a 200ML entitlement licence in managed areas in the Murray and Murrumbidgee valleys (Table 13.19), is a result of both lower increases in average tariffs in these valleys compared to the rest, and the comparatively small amount of revenue currently derived from base charges (less than 15 per cent).

Table 13.20 Example groundwater bills for entitlement volumes of 2,000ML, 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	2,395	2,958	3,677	4,507	5,443	127%
Lachlan	3,751	4,482	5,372	6,351	7,409	98%
Macquarie	3,751	4,689	5,372	6,351	7,409	98%
Far West	4,076	5,236	6,545	8,181	9,950	144%
Murray	3,705	3,865	4,031	4,180	4,308	16%
Murrumbidgee	2,361	2,951	2,924	3,226	3,526	49%
Unmanaged						
Barwon	1,845	2,307	2,884	3,582	4,354	136%
Lachlan	2,912	3,505	4,228	5,025	5,889	102%
Macquarie	2,912	3,505	4,228	5,025	5,889	102%
Far West	3,190	3,987	4,984	6,230	7,787	144%
Murray	2,888	3,030	3,178	3,315	3,441	19%
Murrumbidgee	1,822	2,047	2,303	2,565	2,828	55%
North Coast	3,190	3,987	4,984	6,230	7,787	144%
Hunter	3,190	3,987	4,984	6,230	7,787	144%
South Coast	3,190	3,987	4,984	6,230	7,787	144%

Table 13.21 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	132	85	27	-87%
Lachlan	211	178	141	94	37	-82%
Macquarie	211	178	141	94	37	-82%
Far West	213	182	148	105	53	-75%
Murray	211	175	134	84	22	-90%
Murrumbidgee	204	169	128	79	18	-91%
Unmanaged						
Barwon	93	79	64	45	22	-77%
Lachlan	98	85	71	52	29	-70%
Macquarie	98	85	71	52	29	-70%
Far West	100	88	76	61	43	-57%
Murray	98	83	65	44	17	-82%
Murrumbidgee	93	78	61	40	14	-85%
North Coast	100	88	76	61	43	-57%
Hunter	100	88	76	61	43	-57%
South Coast	100	88	76	61	43	-57%

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 draft 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.

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. The Tribunal intends working with the agencies to define the performance indicators and measures that identify the benefits to customers from the increased expenditure and prices.

13.5 Expected financial and shareholder outcomes for each agency

Overall, the Tribunal believes that its draft 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 13.22 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 13.22 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	54.0	52.4	53.0	53.4	212.7
DNR	31.9	32.3	32.2	31.3	127.6
Projected tariff revenue					
State Water	45.6	47.6	49.4	51.0	193.5
DNR	23.5	24.7	26.0	27.5	101.8
Difference					
State Water	8.4	4.8	3.6	2.3	19.2
DNR	8.3	7.6	6.2	3.7	25.8
Total	**16.7**	**12.4**	**9.8**	**6.1**	**45.0**

Totals may not add due to rounding.

As discussed in Chapter 12, the Tribunal's draft 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 50 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 13.23). It also indicates that the prices determined will enable State Water to attain a minimum investment grade rating of BBB+ overall.[68]

[68] This financial outcome depends on the Government paying its share of State water's costs.

Table 13.23 Financial indicators and credit ratings for State Water

	2006/07	2007/08	2008/09	2009/10
Ability to service debt				
1. EBITDA interest cover	5.4	5.1	4.2	3.8
NSW Treasury ratings (2002)	AAA	AAA	AA+	AA
2. Funds from operations interest coverage	4.2	4.0	3.4	3.1
Standard and Poors US ratings (1995)	AA	AA	AA	AA
3. Pre-tax interest coverage -	4.9	4.6	3.8	3.3
Standard and Poors US ratings (1995)	AA	AA	AA	AA
Ability to repay debt				
4. Funds flow net debt payback	5.1	6.4	7.6	8.7
NSW Treasury ratings (2002)	A	BBB+	BBB	BB+
5. Funds from operations/total debt (%)	0.2	0.2	0.1	0.1
Standard and Poors US ratings (1995)	AA	A	BBB	BBB
6. Debt gearing (regulatory value)	0.2	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	0.5	0.3	0.3	0.3
NSW Treasury ratings (2002)	BBB	B	B	B
8. Net cash flow/capital expenditure (%)	0.5	0.3	0.3	0.3
Standard and Poors US ratings (1995)	BBB	BB	BB	BB
NSW Treasury overall score and rating				
NSW Treasury total score (0 -10)	7.3	6.0	5.5	5.0
Overall rating	A+	A	BBB+	BBB+
9. Net debt ($m of the day)	89.7	118.7	149.3	182.2

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.

However, it should be noted that State Water's ability to pay a dividend will also depend on it achieving the operating and capital expenditure efficiencies set by the Tribunal.

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 50 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 50 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.
>
> On the basis of 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.[69]

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 of 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.

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69 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
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) affect 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/(E + D) is the proportion of debt funding

i = inflation rate

The Tribunal's considerations and draft 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 draft finding is to base the WACC calculation on a nominal risk free rate of 5.7 per cent and a real risk free rate of 2.6 per cent. The implied inflation is 3.1 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 with similar maturity) to derive inflation for the WACC calculation (using the Fisher equation[70]). The 20-day averages for the nominal and real risk free rate and implied inflation at 17 May 2006 are shown in Table A3.1 below.

Table A3.1 Interest rates and implied inflation calculated on 17 May 2006

	Value (%)*
Nominal risk free rate	5.7%
Real risk free rate	2.6%
Implied inflation	3.1%

* 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.

A3.3 Market risk premium

The Tribunal's draft 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 draft 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).[71] 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 draft 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 indicates that the Australian market risk premium as measured by an arithmetic average including October 1987 is 5.8 per cent.

70 The Fisher equation is $(1 + r_{nominal}) = (1 + r_{real}) \times (1 + i)$

71 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.

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[72]	1882-1987	7.9%
	Arithmetic mean[73]	1882-2001	7.2%
	Arithmetic mean[74]	1946-1991	6.0-6.5%
Hathaway[75]	Arithmetic mean	1882-1991	7.7%
	Arithmetic mean	1947-1991	6.6%
Dimson, Marsh & Staunton[76]	Arithmetic mean	1900-2000	7.6%
Gray[77]	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.

A3.4 Debt margin (including debt raising costs)

The Tribunal's draft finding is that the appropriate level of debt margin is in the range of 1.1 to 1.2 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:

- Assuming BBB+ to BBB rated corporate debt with a 10-year maturity (to best reflect the expected life over which these assets are expected to generate cash flows).
- Using a 20-day average of yields obtained from CBASpectrum.[78]

Allowances for debt raising costs suggested in previous consultancy reports by ABNAmro and Westpac ranged from 12.5 to 25 basis points.

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72 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.

73 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.

74 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.

75 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.

76 Cited in: E. Dimson, P. Marsh and M. Staunton, *Triumph of the Optimist: 101 years of Global Investment Returns*, Princeton University Press, 2002.

77 Gray, S. "Issues in Cost of Capital Estimation", UQ Business Schools, University of Queensland, 19 October 2001.

78 CBASpectrum is a database service from the Commonwealth Bank of Australia. The database estimates fair yield curves for Australian corporate debt.

The resulting overall debt margin for the draft decision is 1.1 to 1.2 per cent.

A3.5 Gearing level

The Tribunal's draft 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.

The gearing ratios of UK water businesses are set out in Table A3.3.

Table A3.3 UK water businesses – gearing (book value of equity)

Business[79]	Gearing (per cent)	
	1990/91	February 2005
Anglican Water Group	13.5	80
Bristol Water	57.5	59
Northumbrian Water	12.9	69
Kelda Group	2.4	52
Severn Trent	0	53

Source: London Stock Exchange. Gearing numbers for 1990/91 from Annual Reports. Gearing numbers for February 2005 from London Stock Exchange.

UK water authorities were privatised in November 1989 and Table A3.3 presents a snapshot of the change in gearing ratios for the largest UK businesses providing water service only since privatisation. In September 2004, the gearing ratios ranged from 52 to 80 per cent with an average of 62 per cent.

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.

79 The Tribunal has limited its analysis to companies that mainly are water businesses and have a market capitalisation in excess of 100 million British pounds. The Tribunal has ignored diversified water businesses, as these would not give correct guidance on the appropriate gearing level for a "pure" water business.

A3.6 Dividend imputation factor (gamma)

The Tribunal's draft 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 draft 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.[80] These studies indicate that the value of gamma is anywhere between zero and one. The Tribunal's view is that assuming the marginal 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. 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 draft finding is to use the statutory tax rate of 30 per cent.

This draft 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.

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80 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.

A3.8 Equity beta

The Tribunal's draft 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 A3.4 shows its decisions on equity beta for the water, energy and transport industries from 1999 to 2005.

Table A3.4 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,[81] 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 A3.5 shows recent regulatory decisions on equity beta for water businesses. It shows that there has been a wide range of decisions on equity beta.

Table A3.5 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

Adjusted using a gearing of 60 per cent.

State Water noted in its submission that it faces greater level of risk than other utilities[82] due to the nature of its pricing structure and due to what it believes is essentially a revenue cap resulting from extraction limits under the water sharing plans. As it is only systematic or economy-wide risk that is reflected in the equity beta, the Tribunal has estimated an equity beta for State Water by reviewing the systematic risks that it faces relative to the metropolitan water businesses.

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. Therefore, its draft 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.

81 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.

82 State Water Corporation submission to IPART: Review of Bulk Water Prices from 2006/07, Volume 1, September 2005, p 89.

APPENDIX 4 VALLEY DATA

State Water

Tables A4.1 to A4.2 show the Tribunal's draft findings on the user-share operating and capital expenditure for State Water broken down by valley.

Table A4.1 Tribunal's draft findings on the State Water's user-share operating expenditure allocated by valley ($million, 2006/07) (including MDBC and DBBRC costs)

Region/river valley	Financial Year					
	2005/06	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Border	1.2	2.3	1.8	1.7	1.7	7.5
Gwydir	1.9	2.7	2.5	2.4	2.3	9.8
Namoi	2.3	3.1	2.8	2.8	2.7	11.4
Peel	0.6	1.0	0.9	0.9	0.8	3.5
Lachlan	3.5	3.6	3.3	3.2	3.1	13.1
Macquarie	2.6	3.2	2.9	2.8	2.8	11.7
Far West	-					
Murray	5.7	13.6	13.8	14.3	14.5	56.3
Murrumbidgee	5.6	5.2	4.7	4.6	4.5	19.0
North Coast	0.3	0.6	0.5	0.5	0.5	2.1
Hunter	2.5	2.9	2.7	2.6	2.6	10.8
South Coast	0.3	0.6	0.5	0.5	0.5	2.1
Fish River Scheme	n/a	3.1	2.8	2.8	2.7	11.3
Total	**26.5**	**41.7**	**39.2**	**39.1**	**38.7**	**158.7**

Totals may not add due to rounding.

Table A4.2 Tribunal's draft findings on the State Water's user-share revenue requirement associated with capital investment allocated by valley ($million, 2006/07)

Region/river valley	Financial Year					
	2005/06	2006/07	2007/08	2008/09	2009/10	Total (2006/07-2009/10)
Border	0.2	0.2	0.3	0.3	0.3	1.0
Gwydir	1.0	1.2	1.2	1.3	1.3	5.0
Namoi	0.7	0.9	1.0	1.1	1.2	4.3
Peel	0.2	0.2	0.2	0.2	0.3	1.0
Lachlan	0.8	0.9	1.0	1.2	1.3	4.5
Macquarie	1.0	1.2	1.3	1.4	1.5	5.4
Far West	0.0	0.0	0.0	0.0	0.0	0.0
Murray	4.2	0.9	1.0	1.2	1.3	4.4
Murrumbidgee	2.4	1.8	1.9	2.0	2.1	7.8
North Coast	0.2	0.2	0.3	0.3	0.3	1.1
Hunter	0.7	0.8	0.9	1.0	1.0	3.7
South Coast	0.1	0.1	0.2	0.2	0.2	0.6
Fish River Scheme	n/a	3.6	3.8	3.9	3.9	15.2
Total	**11.4**	**12.3**	**13.1**	**13.9**	**14.7**	**54.0**

Totals may not add due to rounding.

DNR

Table A4.3 shows the Tribunal's draft findings on the user-share operating expenditure and depreciation for DNR broken down by valley.

Table A4.3 Tribunal's draft findings on the DNR's user-share operating expenditure and depreciation allocated by valley ($million, 2006/07)

Region/river valley	Financial Year					
	2005/06	2006/07	2007/08	2008/09	2009/10	Total
Regulated activities						
Border	0.8	0.6	0.6	0.6	0.6	2.5
Gwydir	0.9	0.6	0.6	0.6	0.6	2.4
Namoi	1.0	0.6	0.6	0.6	0.6	2.3
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	1.0	4.3
Far West	-	-	-	-	-	-
Murray	3.1	4.5	4.5	4.4	4.0	17.4
Murrumbidgee	2.4	3.0	3.0	2.8	3.0	11.8
North Coast	0.1	0.3	0.3	0.3	0.3	1.0
Hunter	1.6	0.4	0.4	0.4	0.4	1.6
South Coast	0.1	0.1	0.1	0.1	0.1	0.3
Total	**12.1**	**11.9**	**12.3**	**11.9**	**11.6**	**47.7**
Unregulated activities						
Border	0.2	0.2	0.2	0.2	0.2	0.7
Gwydir	0.1	0.2	0.2	0.2	0.2	0.7
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	0.5	0.5	0.6	0.5	2.0
Macquarie	0.7	0.4	0.5	0.5	0.5	2.0
Far West	1.4	1.4	1.4	1.5	1.4	5.7
Murray	0.3	0.3	0.3	0.4	0.4	1.4
Murrumbidgee	0.5	0.4	0.4	0.8	0.5	2.1
North Coast	2.9	2.0	2.0	2.1	2.1	8.3
Hunter	1.3	1.1	1.1	1.1	1.0	4.2
South Coast	3.2	3.0	3.0	3.0	3.0	12.1
Total	**11.6**	**9.7**	**9.9**	**10.5**	**10.1**	**40.1**
Groundwater						
Border	0.1	0.4	0.4	0.4	0.4	1.5
Gwydir	0.4	0.7	0.7	0.7	0.7	2.6
Namoi	1.7	0.9	0.9	0.9	0.9	3.6
Peel	0.4	0.2	0.2	0.2	0.2	1.0
Lachlan	0.8	1.2	1.2	1.1	1.0	4.5
Macquarie	0.9	1.6	1.6	1.4	1.4	6.0
Far West	1.3	0.8	0.7	0.5	0.5	2.5
Murray	0.9	1.1	1.1	1.1	1.1	4.3
Murrumbidgee	1.7	0.9	0.9	0.9	0.9	3.6
North Coast	0.6	0.9	1.0	1.0	1.0	3.9
Hunter	0.6	0.8	0.7	0.8	0.8	3.0
South Coast	1.0	0.8	0.8	0.8	0.8	3.3
Total	**10.6**	**10.3**	**10.1**	**9.8**	**9.6**	**39.8**

Totals may not add due to rounding.

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)[83].

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).

[83] 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				

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	2.30	1.55	-33%	1.22	-21%	1.22	0%
GS Entitlement charge	1.50	1.54	1.55	0%	1.22	-21%	1.22	0%
Usage charge	1.74	1.79	1.80	0%	1.42	-21%	1.42	0%
Gwydir								
HS Entitlement charge	1.38	1.43	0.96	-33%	0.66	-31%	0.66	0%
GS Entitlement charge	0.92	0.95	0.96	1%	0.66	-31%	0.66	0%
Usage charge	1.08	1.11	1.12	1%	0.77	-31%	0.77	0%
Namoi								
HS Entitlement charge	2.62	2.70	1.82	-33%	1.04	-43%	1.04	0%
GS Entitlement charge	1.75	1.81	1.82	1%	1.04	-43%	1.04	0%
Usage charge	2.09	2.15	2.17	1%	1.24	-43%	1.24	0%
Peel								
HS Entitlement charge	2.41	2.48	1.41	-43%	1.14	-20%	1.14	0%
GS Entitlement charge	1.06	1.09	1.41	30%	1.14	-20%	1.14	0%
Usage charge	1.92	1.98	2.57	30%	2.07	-20%	2.07	0%
Lachlan								
HS Entitlement charge	1.46	1.51	1.03	-32%	0.87	-15%	0.85	-3%
GS Entitlement charge	0.97	1.00	1.03	3%	0.87	-15%	0.85	-3%
Usage charge	1.12	1.15	1.18	3%	1.00	-15%	0.98	-3%
Macquarie								
HS Entitlement charge	0.90	0.93	0.73	-22%	0.87	20%	0.87	0%
GS Entitlement charge	0.70	0.72	0.73	1%	0.87	20%	0.87	0%
Usage charge	0.94	0.97	0.98	1%	1.18	20%	1.18	0%

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	1.31	-8%	1.88	43%	1.44	-24%
GS Entitlement charge	1.26	1.30	1.31	1%	1.88	43%	1.44	-24%
Usage charge	0.34	0.35	0.35	1%	0.50	43%	0.39	-24%
Murrumbidgee								
HS Entitlement charge	1.00	1.03	0.99	-5%	1.15	16%	0.93	-19%
GS Entitlement charge	0.95	0.98	0.99	1%	1.15	16%	0.93	-19%
Usage charge	0.25	0.25	0.25	1%	0.30	16%	0.24	-19%
North Coast								
HS Entitlement charge	2.09	2.16	1.67	-23%	25.54	1433%	2.90	-89%
GS Entitlement charge	1.61	1.66	1.67	1%	25.54	1433%	2.90	-89%
Usage charge	1.08	1.11	1.12	1%	17.15	1433%	1.95	-89%
Hunter								
HS Entitlement charge	3.30	3.41	2.64	-23%	1.14	-57%	1.14	0%
GS Entitlement charge	2.36	2.43	2.64	8%	1.14	-57%	1.14	0%
Usage charge	2.35	2.42	2.63	8%	1.13	-57%	1.13	0%
South Coast								
HS Entitlement charge	2.08	2.14	1.67	-22%	4.11	146%	2.88	-30%
GS Entitlement charge	1.60	1.65	1.67	2%	4.11	146%	2.88	-30%
Usage charge	1.07	1.10	1.12	2%	2.75	146%	1.93	-30%

Other factors affecting the final prices are the elimination of the bulk discounts in the Lachlan, Murray and Murrumbidgee valleys,
and the cap place on real price increases on 15 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 $/unit share)	4.00	4.12	3.15	-24%	4.40	40%	4.42	0%
GS entitlement ($ML or $/unit share)	2.68	2.76	2.11	-24%	2.95	40%	2.95	0%
Usage ($/ML)	3.11	3.21	4.04	26%	5.65	40%	5.65	0%
Gwydir								
HS entitlement ($ML or $/unit share)	4.25	4.38	2.92	-33%	4.03	38%	4.79	19%
GS entitlement ($ML or $/unit share)	2.82	2.91	1.94	-33%	2.68	38%	2.65	-1%
Usage ($/ML)	3.29	3.39	5.09	50%	7.04	38%	7.04	0%
Namoi								
HS entitlement ($ML or $/unit share)	8.04	8.29	6.82	-18%	8.78	29%	8.78	0%
GS entitlement ($ML or $/unit share)	5.36	5.53	4.55	-18%	5.85	29%	5.85	0%
Usage ($/ML)	6.42	6.62	7.73	17%	9.94	29%	9.94	0%
Peel								
HS entitlement ($ML or $/unit share)	11.52	11.88	6.56	-45%	7.94	21%	11.14	40%
GS entitlement ($ML or $/unit share)	5.05	5.21	2.88	-45%	3.48	21%	1.66	-52%
Usage ($/ML)	9.19	9.47	20.59	117%	24.93	21%	24.93	0%
Lachlan								
HS entitlement ($ML or $/unit share)	5.80	5.98	3.61	-40%	3.83	6%	5.69	48%
GS entitlement ($ML or $/unit share)	3.86	3.98	2.40	-40%	2.55	6%	2.32	-9%
Usage ($/ML)	4.42	4.56	8.12	78%	8.63	6%	8.77	2%
Macquarie								
HS entitlement ($ML or $/unit share)	3.66	3.77	2.66	-30%	3.24	22%	4.52	39%
GS entitlement ($ML or $/unit share)	2.81	2.90	2.04	-30%	2.49	22%	2.40	-3%
Usage ($/ML)	3.79	3.91	5.43	39%	6.64	22%	6.64	0%
Murray								
HS entitlement ($ML or $/unit share)	4.43	4.57	2.41	-47%	4.24	76%	4.37	3%
GS entitlement ($ML or $/unit share)	4.02	4.14	2.19	-47%	3.84	76%	2.91	-24%
Usage ($/ML)	1.09	1.12	2.79	148%	4.91	76%	5.43	11%
Murrumbidgee								
HS entitlement ($ML or $/unit share)	3.28	3.38	1.67	-51%	1.28	-23%	1.62	27%
GS entitlement ($ML or $/unit share)	3.11	3.21	1.58	-51%	1.21	-23%	1.00	-18%
Usage ($/ML)	0.82	0.85	2.68	217%	2.06	-23%	2.34	14%

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)
North Coast								
HS entitlement ($ML or $/unit share)	10.59	10.92	4.68	-57%	2.84	-39%	3.27	15%
GS entitlement ($ML or $/unit share)	8.14	8.39	3.60	-57%	2.19	-39%	2.18	0%
Usage ($/ML)	5.42	5.59	50.32	801%	30.59	-39%	30.59	0%
Hunter								
HS entitlement ($ML or $/unit share)	6.61	6.81	4.19	-38%	6.80	62%	8.66	27%
GS entitlement ($ML or $/unit share)	4.72	4.87	2.99	-38%	4.86	62%	3.90	-20%
Usage ($/ML)	4.70	4.85	8.31	71%	13.48	62%	13.48	0%
South Coast								
HS entitlement ($ML or $/unit share)	10.60	10.93	5.49	-50%	8.02	46%	9.14	14%
GS entitlement ($ML or $/unit share)	8.15	8.40	4.22	-50%	6.17	46%	6.10	-1%
Usage ($/ML)	5.43	5.60	16.49	195%	24.10	46%	24.10	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.