IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Review of prices for the Water Administration Ministerial Corporation

For the NSW Office of Water - From 1 July 2011

Water — Draft Report
October 2010

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The Tribunal members for this review are:

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Mr James Cox, Chief Executive Officer and Full Time Member

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Invitation for submissions

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

Submissions are due by 29 November 2010.

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

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

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

We may choose not to publish a submission—for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. IPART will then make every effort to protect that information, but it could be subject to appeal under freedom of information legislation.

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1 Executive summary

1.1 Introduction

The Independent Pricing and Regulatory Tribunal of NSW (IPART) is currently reviewing the maximum prices that the NSW Office of Water (NOW) can charge for the monopoly services it delivers on behalf of the Water Administration Ministerial Corporation (WAMC).[1]

This report seeks stakeholder feedback on our draft determination by 29 November 2010. This report sets out and explains our draft determination, including the decisions that underpin the determination and how it affects water users, NOW, the NSW Government and the environment.

Unless otherwise stated, the figures in this report are in $2009/10. The accompanying Draft Determination is in $2010/11. We also note that costs and prices in this report are generally not presented for the year 2010/11. This is because the last year of the 2006 Determination period was 2009/10, and this new determination is now not scheduled to commence until 2011/12.[2]

For simplicity, we often use the term 'entitlement' throughout this report. Users with a water management licence should note that, for the purposes of this document, 1 unit share equals 1 ML of entitlement.[3]

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1 WAMC is the legal entity responsible for water management in NSW. Its water planning and management activities are delivered by NOW.

2 This determination was originally intended to commence in 2010/11. However, as NOW provided late and incomplete information, IPART had to 'stop the clock' during this review, which has delayed the start of the new determination. In the absence of the new determination, IPART's 2006 Determination provided that 2009/10 prices should continue over 2010/11.

3 When a water sharing plan commences, licences issued under the *Water Act 1912* (WA) are immediately replaced with water access licences issued under the *Water Management Act 2000* (WMA). As water sharing plans have not yet commenced in all areas, some WA licences remain. Under the WA, licence holders hold *ML* of water entitlement; whereas under the WMA, they hold *unit shares* of available water. For the purposes of modeling prices, we have assumed that 1 unit share equals 1 ML of entitlement (as has NOW in the entitlement volume data that it has provided us). Further, as explained in Chapter 9, we have made the draft decision not to include conversion factors in the Determination.

1.2 What is happening?

IPART seeks stakeholder feedback on draft prices to be charged by NOW for:

- holding entitlements for water and extracting water from regulated rivers, unregulated rivers and groundwater sources (water management prices)
- issuing water access licences, works approvals and other consent transactions under the NSW *Water Management Act 2000* (consent transaction charges), and
- maintaining and reading meters (meter service and reading charges).

These prices will take effect on 1 July 2011 and continue until 30 June 2014.

New water management charges

IPART's decisions result in increases in water management prices for most valleys in NSW. IPART acknowledges that, in percentage terms, prices are increasing significantly for most users. However, through these prices, we consider that water users are being asked to pay for their fair share of NOW's efficient costs of its monopoly services. We note that we have determined these efficient costs after careful consideration and independent review, and that users will ultimately benefit from NOW's monopoly services as they are aimed at maintaining and protecting the water property rights system. IPART's analysis also suggests that:

- 51% of licences will be subject to the minimum bill of $95 a year
- 71% of licences will be subject to a bill of $300 or less a year by 2014, and
- 84% of licences will face a bill increase of less than $100 a year by 2014.

IPART's draft decision is to maintain the current system of valley based prices for regulated and unregulated rivers and to move towards region-based charges for groundwater (where the state is divided into two regions comprising 'inland' valleys and 'coastal' valleys). IPART also made the draft decision to set a 2-part tariff (comprising a fixed charge and a usage charge) for all users with a meter and a 1-part tariff for users without a meter. Charges have also been set for special category licences.[4]

As such, IPART's draft determination includes prices for each of the different water sources, regions and price structures. To illustrate the potential outcomes for individual users paying a 1-part or a 2-part tariff in the different valleys, Tables 1.1 to 1.3 compare the forecast annual bill for 1 ML of licensed entitlement in each year of the determination. In doing so, forecast bills under the 2-part tariffs assume that annual usage equates to forecast usage. In addition, the tables show the total bill

[4] Specific prices have been set for some special category licences including: flood-plain harvesting licences; supplementary licences; supplementary groundwater licences; high flow licences; licences in the Far West without an entitlement; and licence holders in the Far West whose entitlement was not reduced by the Barwon Darling Cap. For information about these draft prices see Chapters 6 and 9.

change (per ML) from 2009/10 to 2013/14, which is the last year of the 2011 Determination period, and compare this to the total increase that NOW proposed.[5]

Table 1.1 Regulated Rivers – Forecast user bill per ML of entitlement ($2009/10)

Valley	Bill per ML of entitlement Year ending June				Increase 2010 to 2014					
					IPART		NOW Proposed		Difference in change between IPART and NOW	
	2010	2012	2013	2014	$	%	$	%	$	%
Border	2.31	2.78	2.94	2.99	0.68	**29%**	2.22	96%	-1.55	**-67%**
Gwydir	1.21	1.45	1.72	1.76	0.55	**45%**	1.59	131%	-1.04	**-86%**
Namoi	2.13	2.55	3.06	3.55	1.42	**67%**	3.50	165%	-2.08	**-98%**
Peel	1.74	2.09	2.51	3.01	1.27	**73%**	5.67	325%	-4.40	**-252%**
Lachlan	1.39	1.66	2.00	2.40	1.01	**73%**	2.86	206%	-1.85	**-134%**
Macquarie	1.56	1.87	2.24	2.55	0.99	**64%**	2.48	159%	-1.49	**-96%**
Murray	1.63	1.85	1.90	1.93	0.30	**19%**	1.71	105%	-1.40	**-86%**
Murrumbidgee	1.22	1.46	1.55	1.58	0.36	**30%**	1.52	125%	-1.15	**-95%**
North Coast	3.17	3.80	4.56	5.48	2.31	**73%**	6.82	215%	-4.52	**-143%**
Hunter	2.04	2.44	2.93	3.52	1.48	**73%**	7.55	371%	-6.07	**-298%**
South Coast	3.73	4.48	5.37	6.45	2.72	**73%**	7.41	199%	-4.69	**-126%**

Note: differences may not add due to rounding.

Source IPART analysis.

[5] As mentioned in Section 1.3.4, we have set prices so that, for most users, the annual increase in forecast bills does not exceed 20% per annum (assuming forecast usage levels). A 20% per annum increase over 3 years equates to a total increase over the 3 year period of about 73%. This explains why the forecast increases in bills over 2010 to 2014 for many valleys listed in Tables 1.1 to 1.3 equals 73%.

Table 1.2 Unregulated Rivers– Forecast user bill per ML of entitlement ($2009/10)

Valley	Bill per ML of entitlement Year ending June				Increase 2010 to 2014					
					IPART		NOW Proposed		Difference in change between IPART and NOW	
	2010	2012	2013	2014	$	%	$	%	$	%
Border	2.78	3.34	4.01	4.81	2.03	**73%**	4.13	148%	-2.10	**-76%**
Gwydir	2.78	3.34	4.01	4.81	2.03	**73%**	4.13	148%	-2.10	**-76%**
Namoi	2.78	3.34	4.01	4.81	2.03	**73%**	4.13	148%	-2.10	**-76%**
Peel	2.78	3.34	4.01	4.81	2.03	**73%**	4.13	148%	-2.10	**-76%**
Lachlan	4.95	5.94	7.12	7.56	2.62	**53%**	5.16	104%	-2.54	**-51%**
Macquarie	4.95	5.94	7.12	7.56	2.62	**53%**	5.16	104%	-2.54	**-51%**
Far West	5.78	5.38	5.77	6.01	0.24	**4%**	2.13	37%	-1.90	**-33%**
Murray	5.12	6.15	7.38	8.72	3.60	**70%**	6.06	118%	-2.46	**-48%**
Murrumbidgee	6.18	7.42	8.91	10.69	4.50	**73%**	13.79	223%	-9.29	**-150%**
North Coast	6.87	7.90	8.59	9.02	2.15	**31%**	4.89	71%	-2.73	**-40%**
Hunter	4.57	3.71	3.92	4.03	-0.54	**-12%**	-0.96	-21%	0.42	**9%**
South Coast	3.59	3.13	3.25	3.38	-0.21	**-6%**	0.73	20%	-0.94	**-26%**

Note: differences may not add due to rounding.

Source IPART analysis.

Table 1.3 Groundwater– Forecast user bill per ML of entitlement ($2009/10)

Valley	Bill per ML of entitlement Year ending June				Increase 2010 to 2014					
					IPART		NOW Proposed		Difference in change between IPART and NOW	
	2010	2012	2013	2014	$	%	$	%	$	%
Border	3.71	4.45	5.34	6.27	2.56	**69%**	6.58	177%	-4.02	**-108%**
Gwydir	3.71	4.45	5.34	6.27	2.56	**69%**	6.58	177%	-4.02	**-108%**
Namoi	3.71	4.45	5.34	6.27	2.56	**69%**	6.58	177%	-4.02	**-108%**
Peel	3.71	4.45	5.34	6.27	2.56	**69%**	6.58	177%	-4.02	**-108%**
Lachlan	4.64	5.57	5.94	6.27	1.63	**35%**	5.65	122%	-4.02	**-87%**
Macquarie	4.64	5.57	5.94	6.27	1.63	**35%**	5.65	122%	-4.02	**-87%**
Far West	6.82	5.64	5.94	6.27	-0.55	**-8%**	3.46	51%	-4.02	**-59%**
Murray	3.95	4.74	5.69	6.27	2.32	**59%**	6.33	160%	-4.02	**-102%**
Murrumbidgee	1.84	2.21	2.66	3.19	1.34	**73%**	8.44	458%	-7.10	**-385%**
North Coast	6.82	5.20	5.28	5.33	-1.49	**-22%**	2.40	35%	-3.90	**-57%**
Hunter	6.82	5.20	5.28	5.33	-1.49	**-22%**	2.40	35%	-3.90	**-57%**
South Coast	6.82	5.20	5.28	5.33	-1.49	**-22%**	2.40	35%	-3.90	**-57%**

Note: differences may not add due to rounding.

Source IPART analysis.

Table 1.3 illustrates bill impacts for groundwater users in 'groundwater management areas' currently paying a 2-part tariff. Relative to 2009/10, groundwater users currently paying a low 1-part tariff will experience greater increases, as described in Chapter 9.

Increase to the minimum bill

IPART has set a standard minimum bill for small entitlement holders across all water sources. Under the draft determination, that bill will rise from $60 per annum to $95 per annum from 2011/12. This represents an increase of approximately 60%.

In setting the new minimum bill, we were mindful of the cap (20% per annum increase in forecast bills) we applied when setting entitlement and usage charges. However, rather than gradually increasing the minimum bill at 20% per annum over the 3-year determination period, we decided to immediately increase this charge by approximately 60%.[6] We consider this warranted because, unlike other charges, the minimum bill remained constant (in real terms) through 2006/07 to 2009/10. In

[6] 20% per annum increases over 3 years equals about a 73% increase in total over the period, which equates to a minimum bill of approximately $105. However, given we are proposing that this figure be applied from the first year of the determination period; we have opted for the lower figure of $95.

addition, NOW has indicated that it does not currently cover its water management and administration costs associated with small entitlement holders. We also consider that our proposed $35 increase (rather than a gradual annual increase of 20% or approximately $15 per annum) provides a stronger incentive for licence holders to consolidate their licences, where possible.

New transaction charges and new meter service and reading charges

All consent transaction charges increase under the draft determination, in line with increases in the estimated efficient costs of issuing licences and approvals.

Under the draft determination, new meter service and reading charges are introduced to recover the efficient costs NOW is expected to incur in maintaining Government-installed meters, reading user-owned meters, dealing with disputes related to meter accuracy, and validating relocated meters.[7] These charges range from $213 to $679 per meter for the servicing of different types of Government-installed meters and $131 per meter for the reading of user-owned meters for billing purposes. In setting these charges, we have made sure that meter reading and operating and maintenance costs are excluded from NOW's cost base (which is used to set water management prices), to ensure that users do not pay twice for these meter service and reading activities. These charges are payable only by metered unregulated river and groundwater users.

These new charges are necessary, given the planned roll-out of several thousand Commonwealth Government funded meters across the Hawkesbury-Nepean River and Murray Darling Basin over the coming years. The charges are broadly in line with similar meter service charges that were established for regulated river users in our 2010 State Water Determination.

However, to ensure stakeholders have more information about NOW's metering project and future operating expenditure, NOW is required to provide information on the framework that it will apply to make decisions about the type and location of the meters that will be installed. This information is required by 29 November 2010.

1.3 Why are water management prices increasing?

IPART recognises that to ensure a robust and enforceable system of water property rights, NOW must increase the level of its information collection, analysis, and compliance and enforcement activities. Such additional effort will benefit irrigators and the environment, as it will result in a more reliable system of water allocation and improved monitoring of the available resource.

[7] For simplicity, we often refer to these meter service, meter reading, dispute resolution and validation charges collectively as 'meter service and reading charges' throughout the report.

1.3.1 Increases in the cost of water management to secure water property rights

Our draft decision is to allow a 41% increase by 2014 in NOW's total efficient costs associated with undertaking its monopoly water management activities.[8] Operating expenditure is by far the most significant component of NOW's total efficient costs, accounting for about 75% of NOW's monopoly service costs by 2014. We have allowed a 17% increase in the efficient level of operating expenditure over the 2011 Determination period, relative to 2009/10. This is primarily due to increased costs associated with:

- the operation and maintenance of NOW's expanded hydrometric network
- the operation and maintenance of NOW's upgraded surface water databases
- the requirement to complete and implement 38 additional water sharing plans over the determination period
- the requirement to remake and implement 31 existing water sharing plans over the period
- the need for increased compliance activities due to increased competition for water resources and a higher number of rules to be enforced (due to additional water sharing plans), and
- the need to finalise and implement key operational plans to address floodplain harvesting, control of stock and domestic rights holders, aquifer interference, water return flows, stormwater harvesting, trading groundwater in embargoed areas and rules for the allocation of unassigned water to licensed users.[9]

Before allowing increases in expenditure, IPART and its consultants PricewaterhouseCoopers and Halcrow Pacific (PwC) carefully reviewed NOW's proposed expenditures. As a result of the process:

- the costs of activities that were not regarded as monopoly services were excluded
- NOW's proposed operating and capital expenditure were reduced to reflect the scope for NOW to use its existing resources more efficiently and deficiencies in NOW's explanation and justification of its cost forecasts.

In line with PwC's findings on the scope for efficiency gains, we reduced NOW's proposed operating expenditure by 23.6% by 2014.[10]

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8 The Monopoly Services are described in clause 3 of the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004*. A detailed explanation of how we identified and defined these monopoly water management activities is provided in Chapter 3 of this report. We note that NOW's monopoly service activities represent only a portion of NOW's total activities. In its presentations to the public hearings in July 2010, NOW stated that, as at October 2009, its staff totalled 619 FTEs, of which 41% (256 FTEs) were working on monopoly service activities.

9 PricewaterhouseCoopers, *IPART Review of NSW Office of Water's water management expenditure*, 30 June 2010, pp 5 - 6, NOW's December 2009 submission, pp 38-41.

10 This reduction also includes a small adjustment related to meter reading costs, which we decided should be recovered directly from users through meter reading charges. The reference to proposed operating costs includes what NOW describes as Scenario 1 and Scenario 2. It does not include the MDBA.

In addition, IPART made the decision to set the opening value of NOW's regulatory asset base (RAB) at zero.[11] This reflects our view that, given PwC's findings about the deficiencies of NOW's capital planning and asset management systems, we could not confidently quantify the prudent and efficient value of NOW's existing asset base. Setting the opening value of the RAB at zero means that NOW will not earn a return on, or of, all capital investments that it made prior to 1 July 2011.

Table 1.4 Draft decision on NOW's total efficient costs of undertaking its monopoly services ($'000, 2009/10)

	2009/10[a]	2011/12	2012/13	2013/14	% Change 2009/10 to 2013/14
Operating expenditure	45,256	49,696	51,645	53,041	17%
MDBA contributions	3,712	16,551	15,153	16,878	355%
BRC contributions	437	406	382	385	-12%
Allowance for depreciation	933	49	147	246	-74%
Allowance for return on assets	0	69	200	330	NA
Total efficient costs	**50,339**	**66,772**	**67,528**	**70,881**	**41%**

[a] 2009/10 costs are 'allowed' costs under the 2006 Determination.

Note: totals may not add due to rounding.

Source: IPART analysis.

1.3.2 Increases in the amount of revenue to be recovered from users

Users only pay a proportion of NOW's total efficient costs of its monopoly water management services. IPART's process sets the share of costs to be recovered from water users through water management charges, and the share to be funded by the Government (on behalf of the community). IPART divides NOW's costs on the basis of the impactor pays principle.[12] Under this approach, NOW's efficient costs of undertaking its monopoly activities are allocated to water users or the community, based on which party created the costs or the need to incur the costs.

Our draft decision is that the notional user share of NOW's total efficient costs of its monopoly services will increase by $8.76 million by the end of the determination period. This is equivalent to a 26% increase in the notional revenue to be recovered from users, relative to that allowed for 2009/10. Table 1.5 shows IPART's draft decisions on the share of revenue to be recovered from users.

11 For the purpose of calculating the allowances for a return on assets and regulatory depreciation.

12 This is consistent with the April 2010 COAG National Water Initiative Pricing Principles, which require that water management costs are allocated between water users and governments using the impactor pays approach.

The proportion of total costs that users will pay will reduce. In 2009/10, users were forecast to pay 66% of NOW's total cost of its monopoly services. Under the draft determination, users would notionally pay 59% by the last year of the determination period. This reduction largely reflects the impact of IPART's draft decision on users' contribution to the Murray Darling Basin Authority (MDBA).

NOW proposed an increase in its contribution to the MDBA, 37% of which it sought to recover from users. However, NOW did not provide us with sufficient information to be confident that this significant increase was efficient and consistent with the impactor pays principle. Therefore, our decision is to maintain the user share of the contribution at $1.7 million per year for the 2011 Determination period.

NOW also proposed that users fund approximately $8.8 million per annum (or 85%) of its additional $10.4 million per annum of 'Scenario 2' costs – in the event that these costs are not funded by the Commonwealth. These Scenario 2 costs are NOW's estimates of the additional costs that it will incur to implement the Commonwealth *Water Act 2007* and to accelerate the national water reform agenda. However, after reviewing NOW's Scenario 2 activities, the efficiency of its forecast Scenario 2 costs, and the latest available information on the funding status of these proposed Scenario 2 activities, we allowed for approximately $1.8 million per annum of additional Scenario 2 costs in NOW's monopoly service cost base and attributed about $1.4 million per annum (or 75%) of these costs to users. Therefore, this represents a significant reduction in the user share of additional Scenario 2 costs, relative to NOW's proposal.

Table 1.5 Draft decision on the user share of NOW's total efficient costs of its monopoly water management services ($'000, 2009/10)

	2009/10	2011/12	2012/13	2013/14	% Change 2009/10 to 2013/14
NOW's proposed user share	33,079	60,054	62,151	63,799	93%
NOW's proposed user share as a % of its proposed total revenue requirement	66%	70%	71%	70%	
IPART's notional user share	33,079	39,377	40,841	41,840	26%
IPART's notional user share as a % of total efficient costs	66%	59%	60%	59%	
Difference between NOW's proposal and IPART's determination of notional user share	-	-20,677	-21,310	-21,959	
% difference between NOW's proposal and IPART's determination of notional user share	-	-34%	-34%	-34%	

Source: IPART analysis.

As illustrated in Table 1.6 below, IPART's decision to include customer impact mitigation measures in our calculation of prices further reduces the share of NOW's costs to be funded by users.

1.3.3 Changes to the allocation of user costs between valleys, entitlement volumes and forecast usage

A 26% increase in notional revenue to be recovered from users does not result in a 26% increase in prices for all users. The size of the increase in annual bills per ML of entitlement varies between 4% and 73% for the 3-year period, except for some groundwater users currently subject to a fixed charge only, who will face bill increases greater than this in 2011/12.[13] However, some unregulated river and groundwater users will experience a decrease in bills per ML of entitlement of between 6% and 28% over this period. The considerable variation in impacts between the valleys is due to the new, and more robust, method we used to allocate costs between water sources and valleys, and variations in entitlement and usage forecasts used to set prices, relative to those used in making the 2006 Determination.

Changes to the allocation of the user share of costs across water sources and valleys

For the 2006 Determination, we allocated the user share of costs across water sources and valleys based on the opinions of senior NOW staff[14] about where costs were incurred, as this was the best option available. For this review, NOW proposed a new approach, which involves allocating the user share of costs under each of NOW's cost codes across water sources and valleys based on quantifiable 'cost drivers' assigned to each cost code. For example, the cost driver for the 'surface water quantity monitoring' cost code is the number of water gauging stations in the valley. Therefore, unregulated river users in a valley that has 10% of NOW's water gauging stations will be allocated 10% of the user share of all costs under that code.

Our draft decision is to accept NOW's proposed approach, subject to some minor changes. We consider that it is an improvement on the previous method used to allocate costs across water sources and valleys, as it is more robust, transparent and repeatable. While we recognise that the approach may be refined over time, we expect NOW to use it as the basis of its future annual reporting, and its submissions to the next and future price reviews.

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13 Under the 2006 Determination, groundwater users currently paying a 1-part tariff enjoy lower bills than users on 2-part tariffs. Hence, in transitioning to new prices under the 2011 Determination, these groundwater users currently on a 1-part tariff face higher price/bill increases. While price increases in 2011/12 have not been capped for these users, prices have been set so that their forecast bills should not increase by more than 20% per annum for the last 2 years of the determination.

14 Then the Department of Natural Resources.

However, we note that adopting a new cost allocation approach for this determination has produced a step change in the percentage of costs allocated to different water sources and valleys, and that this is a major driver of price variations between valleys. We have analysed the implications of the new approach by valley to assist stakeholders to respond to the draft determination.[15] For example, our analysis suggests that in the absence of increases in NOW's efficient costs and changes in other price parameters, the new cost allocation methodology results in:

- a change in annual bills for regulated river water users ranging from an increase of 51% in the Hunter valley to a decrease of 9% in the Border valley, with an average increase of around 11% across all regulated rivers
- a change in annual bills for unregulated river water users ranging from a 63% increase in the Border, Gwydir, Namoi and Peel valleys to a 36% decrease in the Far West, with an average increase of 0% across all unregulated rivers
- a reduction in average bills for groundwater users of around 13%, with larger decreases for users in coastal valleys and smaller decreases for inland valley users.

Changes in entitlement volumes used to calculate prices

To set the fixed charge for each water source and valley, we need to make assumptions about the water entitlement in each valley. These assumptions have a major impact on prices. For a given level of valley cost, the larger the entitlement volume or usage volume for that valley, the lower the valley entitlement or usage charge.

We adopted NOW's proposed entitlement volumes for all water sources and valleys, including those for the major water utilities (Hunter Water Corporation and the Sydney Catchment Authority). These volumes were extracted from NOW's 2009 licence billing database, and we consider that they represent the best-available information. We note that for many water sources and valleys, these volumes vary considerably from the volumes used in making the 2006 Determination.

For example, the entitlement volumes for groundwater are 24% lower than those used in making the 2006 Determination. This means that the costs allocated to groundwater have been divided by a smaller number of units, resulting in an average increase in the fixed charge for groundwater users of 41% (when all other determinants of price are held constant).

Changes in usage forecasts

To set the usage charge for each water source and valley, we need to make assumptions about the forecast metered water usage in each valley. For regulated rivers, we used the same usage forecasts as we used in making our recent determination on State Water's prices. While we recognise that some stakeholders will not support this decision, we consider they have not made a compelling case for

15 This analysis is contained in Chapter 7 and Appendix O.

using different usage forecasts for what is essentially the same water resource when determining NOW's prices. For unregulated rivers and groundwater, we used usage forecasts equal to 100% of the entitlement volume, in the absence of better information from NOW.

These usage forecasts vary from those we used in making the 2006 Determination, affecting the usage prices in each valley in different ways. For example, if all other determinants of price are held constant:

- the total forecast usage for regulated rivers is 15% lower than that applied in the 2006 Determination, resulting in an average 18% increase in usage prices
- the forecast usage for unregulated rivers and groundwater differs significantly between valleys, but is generally higher than that applied in the 2006 Determination, resulting in decreases in usage prices.

1.3.4 How has IPART mitigated price impacts?

Given the significant percentage increases in prices for some water sources and valleys, we decided it was necessary to mitigate price shocks for water users.

Therefore, in setting prices, we ensured that the annual increase in the forecast bill for most water sources and valleys does not exceed 20% (based on forecast usage levels). The only exception was for prices for groundwater users in unmanaged areas currently subject to a fixed charge only. In the first year only, we did not cap prices for these users.

The 20% cap on forecast annual bill increases is broadly consistent with the clause in the 2006 Determination that put a 20% cap on unregulated river and groundwater actual annual bill increases (for the same volume of water extracted).

We decided not to include a cap on actual bills in the draft determination, as had been done for unregulated and groundwater users in the 2006 Determination, given the costs and the difficulties faced by NOW in correctly administering that mechanism.

1.3.5 What are the implications for NOW and the NSW Government?

The draft decision to mitigate price shocks means the draft water management prices are not expected to recover 100% of the user share of NOW's total efficient costs of undertaking its monopoly water management activities (ie, the user share of NOW's notional revenue requirement). Rather, we expect these prices will allow NOW to achieve approximately 94% of full cost recovery by 2013/14 (Table 1.6). We note that this is an increase on the 2009/10 level of cost recovery of 88%, as set under the 2006 Determination, and that levels of cost recovery under this draft determination occur in the context of significant increases in costs and prices.

We consider that this outcome reflects an appropriate balance between the need to maintain NOW's level of cost recovery (relative to the 2006 Determination), and the need to protect consumers.

Table 1.6 NOW's forecast levels of cost recovery under the 2011 Draft Determination ($'000, 2009/10)

	2009/10	2011/12	2012/13	2013/14	% Change 2009/10 to 2013/14
IPART's notional user share of costs	33,079	39,377	40,841	41,840	26%
IPART's target user share of costs (via prices)	29,099	33,944	36,925	39,190	35%
Forecast level of cost recovery under IPART's draft determination	88%	86%	90%	94%	

Source: IPART's analysis.

To enable NOW to carry out its water management activities effectively, we expect the NSW Government to fund NOW's remaining efficient costs, including the MDBA contribution that was not recovered from users. IPART notes that the current agreement relating to the contribution of the NSW Government to the MDBA expires 30 June 2011. At the time of funding renegotiations, IPART urges the government to consider issues identified in this report. Table 1.7 shows our assessment of NOW's requirements for government funding for its monopoly water management activities.

Table 1.7 IPART's assessment of the NSW Government contribution to NOW's monopoly activities ($'000, 2009/10)

	2009/10	2011/12	2012/13	2013/14	% Change 2009/10 to 2013/14
Government share of NOW's total efficient costs:					
Operating expenditure	14,999	12,368	12,998	13,557	-10%
MDBA contributions	2,019	14,861	13,463	15,188	652%
BRC contributions	138	129	122	123	-11%
Allowance for depreciation	104	15	44	74	-29%
Allowance for return on assets	0	21	60	99	NA
Total Government share of NOW's total efficient costs:	**17,260**	**27,394**	**26,687**	**29,041**	**68%**
Difference between notional user share and target user share	3,980	5,433	3,916	2,650	-33%
Total Government contribution to the cost of NOW's monopoly activities	**21,239**	**32,828**	**30,603**	**31,691**	**49%**

Note: totals may not add due to rounding.

Source: IPART analysis.

1.3.6 How different is the Draft Determination from NOW's proposal?

For each major cost component, Figure 1.1 compares NOW's proposed total costs of undertaking its monopoly activities and its proposed user share of these costs with IPART's draft decisions on user shares. The key differences between NOW's proposal and IPART's draft prices include:

- IPART's decision that NOW's total efficient operating costs are 23.6% lower than NOW proposed[16]
- IPART's draft decision to not increase the user contribution to the MDBA, as insufficient information on the efficiency of this contribution and the relationship between these costs and the impactor pays principle was provided, and
- IPART's draft decision to establish a regulatory asset base with an opening value of zero means that depreciation and a return on assets are only earned on efficient capital expenditures after 1 July 2011.

Figure 1.1 Draft decision on user share of each cost component, compared with NOW's proposed total cost component and proposed user share ($'000s, 2009/10)

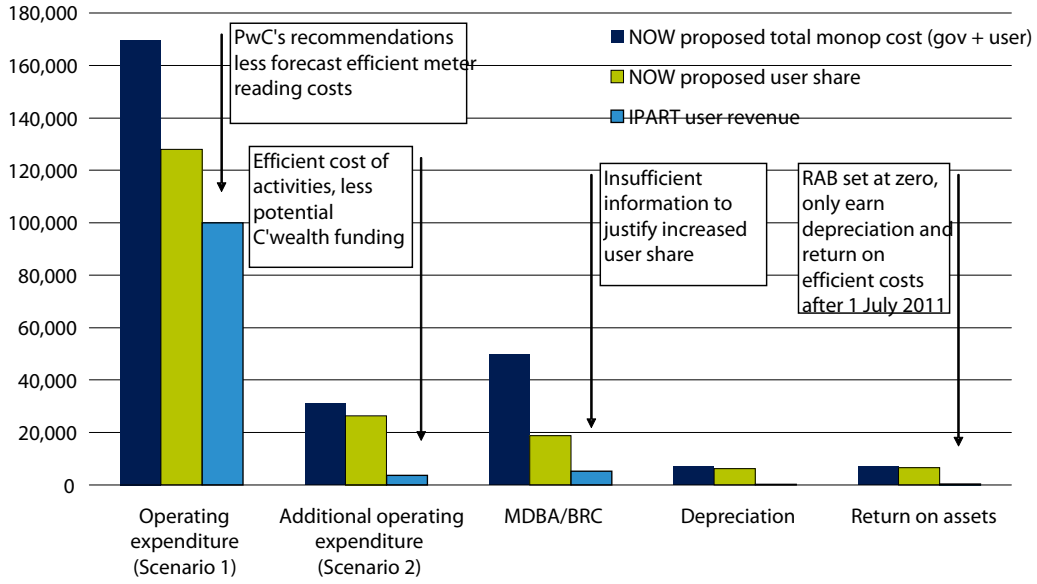


Table 1.8 lists the government and 'target' user shares of NOW's total efficient costs of undertaking its monopoly water management activities, under this Draft Determination. This shows that, relative to the final year of the 2006 Determination period (2009/10), the user share of NOW's costs is increasing in absolute dollar terms, but decreasing as a proportion of NOW's total efficient costs.

16 This reference excludes the MDBA contribution, and includes 'Scenario 2' expenditure.

Table 1.8 Government and user contributions to NOW's costs, under IPART's Draft Determination ($'000s, $2009/10)

	2009/10	2011/12	2012/13	2013/14
Government share of NOW's total efficient costs	21,239	32,828	30,603	31,691
% Government share of NOW's total efficient costs	42%	49%	45%	45%
Target user share of NOW's total efficient costs	29,099	33,944	36,925	39,190
Target user share as a % of NOW's total efficient costs	58%	51%	55%	55%

Note: This table refers to 'target' user share (ie, the revenue expected to be recovered from users via prices), rather than 'notional' user share (which is IPART's assessment of the share of costs attributed to users). The difference between 'target' and 'notional' user share reflects the fact that IPART's draft prices are expected to recover less than 100% of the user share of NOW's costs.

Source: IPART analysis.

1.3.7 What action has IPART taken to improve NOW's performance?

At the time of our last price review, we strongly expressed our concern about the (then) Department of Natural Resources' inadequate response to several long-standing deficiencies in its systems and performance, which meant that the transparency, control and accountability of expenditure on water management activities was not sufficiently robust to support efficient pricing. During the current review, we have found that some of these concerns have still not been addressed. In addition, we have identified the need for NOW to ring-fence its activities related to the monopoly services from its other expenditures, and to improve its capital planning and asset management systems. We have also identified opportunities for NOW to improve its consultation with stakeholders about its expenditures and major initiatives.

We have taken these issues into account in our decisions. For example, our decision not to allow NOW to recover a return of, or on, capital investments prior to 1 July 2011 directly reflects our findings on the deficiencies of its past capital and asset systems.

In addition, we have written to the Minister of Water about these issues, and made recommendations about how they might be resolved. We have also made a draft decision to establish a reporting framework for NOW over the 2011 Determination period, to ensure that both IPART and NOW's stakeholders have adequate information relating to its expenditures and activities over the period, and to enhance review of NOW's proposal at the next price determination.

1.4 Structure of this report

The rest of this report explains IPART's decisions and findings for the draft determination in detail, and the analysis which underpins them. It is structured as follows:

- Chapter 2 provides an overview of the approach we used to set prices
- Chapters 3 to 9 explain our key decisions and findings in relation to setting water management prices
- Chapters 10 and 11 explain our decisions on meter service and consent transaction charges
- Chapter 12 discusses our analysis on the draft determination's implications for water users, NOW and the NSW Government
- Chapter 13 presents our recommendations to the Minister for Water for improving NOW's systems and performance, and our decision to establish a reporting framework for NOW to ensure that adequate and transparent information on its expenditure and outcomes are available for the next price review.

2 Overview of the approach we used to set NOW's prices

NOW levies 3 main types of charges: water management charges; meter service and reading charges; and consent transaction charges. The approach we used to set prices for these charges was generally designed to balance the need to ensure that NOW can fund the efficient costs of providing the services these charges relate to, with the aim of achieving fair and acceptable outcomes for the stakeholders that fund these costs. These stakeholders include water users and the NSW Government (on behalf of the wider community).

This review involved a number of steps to set water management charges. This was partly because identifying the water management services that these charges relate to was not straightforward. It was also partly because the costs related to these services need to be shared between water users and the general community. Then, having made the decision to set valley based charges for regulated and unregulated rivers and to transition towards a coastal /inland split for groundwater, the user share of costs needs to be allocated to individual water users through prices. This involves allocating the user share of costs across 11 regulated river valleys, 12 unregulated river valleys and 12 groundwater areas in NSW, based on the different costs of managing each source of water in each valley.

The main steps in our approach were to:

- decide on the length of the determination period
- decide on water management charges, which involved:
  - identify the specific water management services to be included in estimating the costs to be recovered through these charges
  - determine the full, efficient costs NOW is likely to incur in providing water management activities over the determination period
  - decide on the appropriate share of these costs to be recovered from water users through water management charges
  - decide on the price structure, then allocate the user share of costs across water sources and valleys
  - determine the entitlement volumes and usage forecasts to set prices
- decide on meter service and reading charges
- decide on consent transaction charges
- assess the impact of our pricing decisions on key stakeholders

- decide whether we should establish a reporting framework or any other regulatory measures for NOW over the determination period.

The sections below provide an overview of each of these steps, to assist readers in following the subsequent chapters which discuss the key decisions we made as part of each step. Box 2.1 outlines our review process for this determination to date, and the expected timetable for completing the review.

2.1 Decide on the length of the determination period

Draft decision:

1 IPART's draft decision is that the length of the determination period will be 3 years, starting on 1 July 2011 and ending on 30 June 2014.

In reaching this draft decision, we considered NOW's proposal and stakeholders' views on the appropriate length and start date of the determination period. We concluded that a 3-year period is likely to achieve the greatest net benefit, relative to shorter or longer periods. We concluded that a start date of 1 July 2011 was most practical, given that the need for us to 'stop the clock' earlier in our review (see Box 2.1) had made a 1 July 2010 start date impossible.

The sections below discuss NOW's proposal, stakeholders' views, and our conclusions in more detail.

2.1.1 NOW's proposal on determination length and start date

NOW's December 2009 submission proposed a 3-year determination period, from 1 July 2010 to 30 June 2013. NOW argued that a shorter determination period would impose significant costs on it, and would distract it from its role in delivering water management services. It also argued that a longer determination period would create too great a risk of discrepancy between the forecast costs used in making the determination and its actual costs, particularly given the current uncertainty about the impact of the Commonwealth's Murray Darling Basin Plan on NOW's activities and costs.[17]

At the public hearings held in July 2010, at which point it was clear that a 1 July 2010 start date was no longer possible, NOW:

- Initially argued for a determination start date as early as possible, and against a 1 July 2011 start date (as advocated by irrigators), then later indicated that it accepted the need for a 1 July start date.

17 A draft of the Basin Plan is expected to be released in the latter half of 2010, and the Final Basin Plan is scheduled for release in 2011.

Box 2.1 IPART's review process

To date, our process for this review has involved seeking information from NOW, consulting with stakeholders to understand their views, engaging independent consultants to provide expert advice, considering this information, views and advice, and undertaking our own analysis. More specifically, we have taken the following steps:

- In May 2009, we wrote to the then Department of Water and Energy to advise the Department of the information that needed to be included in its submission and the due date.
- On 31 July 2009 we released the Issues Paper for this review, which discussed key issues to be considered, identified the information required from NOW and sought stakeholder submissions.
- On 4 December 2009 we received NOW's initial and most substantial submission, which outlined its actual and forecast costs and its proposed water management charges and consent transaction fees.
- On 20 January 2010 we received a supplementary submission from NOW, which listed some amendments to the costs and prices in its original submission.
- On 20 January 2010 we decided to 'stop the clock' on our review until more information on NOW's pricing proposal was in the public domain.
- On 3 February 2010 we received a further supplementary submission from NOW, which provided some examples of efficiency gains and a breakdown of its cost forecasts by activity, water source and valley.
- On 30 April 2010 we released PricewaterhouseCoopers and Halcrow Pacific's (PwC's) Draft Report on its review of NOW's proposed expenditure.
- On 5 May 2010 we received an additional supplementary submission from NOW, which proposed meter service charges.
- On 5 May 2010 we announced that we had re-started the review.
- On 16 June 2010 stakeholder submissions were due.
- On 19, 22 and 23 July we held public hearings in Wagga Wagga, Tamworth and Sydney, respectively.
- On 30 June 2010 we published PwC's Final Report on its review of NOW's proposed expenditure.
- On 23 July 2010 we published an amendment to PwC's Final Report.
- On 18 October we published this report and an appendix to the PwC Report that NOW had previously asked not to be published until funding negotiations were more advanced.

We are now seeking stakeholder submissions in response to this Draft Report, which are due by 29 November 2010. (See page iii at the front of this report for information on how to make a submission.)

To complete our review, we will consider these stakeholder submissions, and then make our final decisions and recommendations. We will release our Final Determination and Report in early February 2011.

- Continued to argue for a determination finish date of 30 June 2013 (rather than a year later, given the later start date). It put the view that a shorter determination period was appropriate, given the uncertainty associated with the Murray Darling Basin Plan and the Commonwealth's funding of its 'Scenario 2' costs.

2.1.2 Stakeholder views on determination length and start date

Most stakeholders considered that the determination period should start on 1 July 2011, and should be either 3 or 4 years in length. They argued that:

- Participating in a price review is costly for all parties (eg, due to the time involved in contributing to and conducting the review), so the determination period should be as long as is reasonably possible.
- A start date between 1 July 2010 and 1 July 2011 would result in price changes midway through a financial (and water) year, which would impose additional costs. For example, Murray Irrigation and Western Murray Irrigation Limited submitted that as they had already set their 2010/11 budgets and associated charging schedules, a start date that necessitates the revision of these would create additional work, and would result in less certainty for water users and potential non-compliance with Water Act rules.[18] Similarly, Tamworth Regional Council noted that the Local Government Act requires it to set and publish its retail water charges (which are affected by NOW's charges) prior to the commencement of the financial year.[19]
- A 1 July 2011 start date would signal to NOW that it is not acceptable to delay a process by providing inadequate information for stakeholder comment (Western Murray Irrigation Limited).
- NOW's argument for a shorter determination period, on the grounds that it faces uncertainty until the Murray Darling Basin Plan is in place, is not compelling. According to the NSW Irrigators' Council (NSWIC), NOW's Commonwealth driven or affected work largely relates to the implementation of known programs.[20]

18 Murray Irrigation Limited submission, June 2010; and Western Murray Irrigation Limited submission, June 2010.
19 Tamworth Regional Council presentation at the Tamworth public hearing, 22 July 2010.
20 NSW Irrigators' Council submission, June 2010.

2.1.3 IPART's conclusions on determination length and start date

As noted above, we have decided that the determination period will be 3 years, starting on 1 July 2011 and ending on 30 June 2014 (the 2011 Determination period).

In our view, 1 July 2011 is the most appropriate start date as it:

- provides sufficient notice to irrigators and other water users of new prices, prior to the next financial (and water) year
- provides sufficient time for NOW to develop or refine its systems to accommodate the new tariffs and reporting standards of this determination, prior to the start of the determination
- avoids the practical difficulties associated with changing prices part way through a billing cycle
- ensures large water users do not face legislative compliance issues
- signals to NOW the importance of providing accurate, comprehensive and timely submissions for future price reviews.

We consider that a 3-year determination period best balances the benefits and risks associated with longer and shorter determination periods. In particular, we consider 3 years will:

- lower regulatory costs for stakeholders and NOW (relative to a shorter determination period)
- provide a more stable and predictable regulatory environment for water users and NOW (relative to a shorter determination period)
- create greater incentives for NOW to increase its efficiency (relative to a shorter determination period)
- reduce the risk associated with variation between the forecast costs and revenue assumed in making the determination, and the actual costs and revenue (compared to a longer determination period).

We also note that a 3-year period will mean that NOW's determination concludes at the same time as the 2010 State Water Determination. Stakeholders expressed mixed views about the benefits of NOW's prices being reviewed at the same time as State Water's. Some argued that simultaneous or parallel reviews are easier or less costly for stakeholders to participate in (High Security Irrigators Murrumbidgee). Others favoured staggered reviews, as they can then allocate more resources and attention to each review (NSW Irrigators Council).[21] Where possible, we consider there is benefit in parallel reviews of prices for NOW and State Water, given the number of common issues and stakeholders.

[21] NSW Irrigators' Council presentation at the Wagga Wagga public hearing, 19 July 2010.

2.2 Decide on water management charges

As discussed above, our approach for setting water management charges involved a number of steps. The sections below discuss each of the key steps.

2.2.1 Decide on specific water management activities to be included

NOW levies water management charges on town councils and irrigators for holding entitlements for water from regulated rivers, unregulated rivers and groundwater sources. These charges need to reflect the costs of the water management activities that it undertakes on behalf of the Water Administration Ministerial Corporation (WAMC). These activities aim to ensure that NSW's water resources are managed in a way that ensures all users, including the environment, have access to sustainable water supplies over the long term, and that these resources are shared appropriately.

However, NOW undertakes a wide range of water management activities, and only some of these can properly be considered in setting NOW's water management charges.[22] By law, these charges must reflect only the cost of water management activities that are 'government monopoly services'.

As the information NOW provided in its submissions did not transparently explain how it had identified and costed its monopoly water management services, the first step in our approach for setting water management charges was to make a decision on the services to be included. This step is discussed in detail in Chapter 3.

2.2.2 Determine the full, efficient cost of providing NOW's monopoly water management services

The second step in our approach was to determine the full, efficient costs NOW will incur in providing these monopoly water services over the 2011 Determination period.

To do this we used the building block method, which is the same method we use in other water determinations and other industries. To apply the building block method, we made decisions on:

- NOW's forecast efficient operating expenditure over the 2011 Determination period
- an appropriate allowance for a return on its regulatory asset base, and
- an appropriate allowance for a return of this asset base (regulatory depreciation).

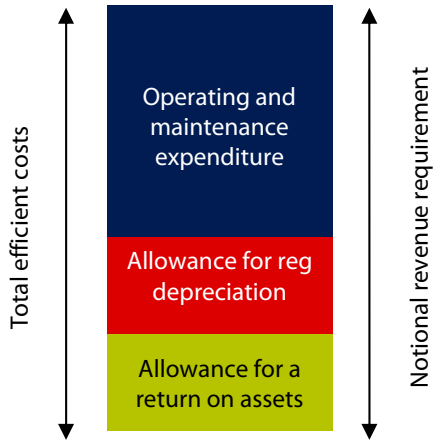
[22] NOW's monopoly service activities represent only a portion of its total activities. In its presentations to the public hearings in July 2010, NOW stated that, as at October 2009, its staff totalled 619 FTEs, of which 41% (256 FTEs) were working on monopoly service (ie, IPART regulated) activities.

The sum of these amounts represents our view of NOW's total efficient costs, or its 'notional revenue requirement' over the 2011 Determination period (see Figure 2.1).

Importantly, we included only the operating expenditure that we considered to be efficient and only the capital expenditure that we considered to be prudent and efficient in calculating NOW's notional revenue requirement. We engaged independent consultants, PricewaterhouseCoopers (PwC) and Halcrow Pacific to review the efficiency and prudency of NOW's actual and forecast operating and capital expenditure over the 2006 and 2011 Determination periods.

In addition, we included NOW's forecast contributions, on behalf of the NSW Government, to the Murray Darling Basin Authority's and the Border Rivers Commission's water management activities in its forecast operating expenditure. However, PwC did not assess these forecast contributions. Our decision on NOW's notional revenue requirement is discussed further in Chapter 4.

Figure 2.1 The building block approach



Note: The proportions of each building block component in this figure are hypothetical and do not represent the actual proportions used to determine NOW's prices.

2.2.3 Decide on the appropriate share of these costs to be recovered from water users through water management charges

The third step in our approach for setting water management charges was to decide how much of NOW's total notional revenue requirement should be notionally funded by water users, and how much should be funded by the general community through contributions from the NSW Government.

As we did for the 2006 Determination, we apportioned NOW's costs to water users and the Government based on the 'impactor pays' principle. This means that, for each of NOW's activity codes, we sought to allocate costs between users and the general community (or Government) in proportion to the contribution that each group makes to creating the costs or the need to incur the costs. The user share for each activity code has been refined through successive reviews and analysis, involving work by independent consultants as well as stakeholder consultation.

It is important to note the distinction between the 'beneficiary pays' principle and the 'impactor pays' principle. Under the beneficiary pays principle, charges would be paid by users on the basis of them benefitting from the service. In contrast, the impactor pays principle allocates costs to those ultimately responsible for creating the costs or the need to incur the costs.

The impactor pays approach ensures that water users face the costs of their activities, including any environmental costs that are a consequence of those activities. This is consistent with the principles of efficient pricing and intergovernmental agreements on cost recovery, including the April 2010 COAG National Water Initiative Pricing Principles.[23]

We note that some stakeholders question the appropriateness of setting user prices to recover the costs of NOW's activities on the grounds of competitive neutrality.[24] IPART is aware that NSW has fulfilled its COAG Water Reform 1994 and National Water Initiative (NWI) commitments, whereas other jurisdictions are yet to implement independent price regulation for water resource management.[25] At every opportunity, IPART urges the full implementation of agreed national water reforms to address this potential barrier to water trading and distortion of downstream markets.

We know that some stakeholders are worried about paying for water management services, given the somewhat intangible nature of NOW's outputs and a perceived absence of 'benefit' for users. In response to these concerns, as well as arguing for the strength of the 'impactor pays' principle, we note that many of NOW's activities do benefit users through the implementation of a secure system of enforceable property rights, enhanced knowledge about resource availability, and systems for trading and monitoring.

Our decision on the user share of NOW's costs is explained further in Chapter 5.

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23 See: www.environment.gov.au/water/policy-programs/urban-reform/index.html, accessed 22 September 2010.

24 For example, submissions received from Murray Irrigation and Murrumbidgee Irrigation, June 2010.

25 ACCC, *Water charge rules for water planning and management charges, issues paper*, October 2008 notes at page 31 that "less than 5 per cent of water planning and management costs are recovered in Queensland through water charges (including an annual licence fee, a water harvesting charge and other transaction fees for dealing with licences)… Victoria does not have an explicit water planning and management charge (such as in New South Wales), although it does effectively recover some costs of water planning and management."

2.2.4 Decide on price structure for each water source in each valley, then set prices

Once we determined the user share of NOW's efficient costs, we made decisions on how these charges should be structured, taking into account the principles of efficient pricing and the distribution of risk between NOW and water users. In particular, we made decisions on:

- The geographic split of prices. In particular, we considered whether to maintain the current valley-based prices for regulated and unregulated rivers, and whether to move to an 'inland' and 'coastal' geographic split for groundwater.
- The structure of charges. We considered whether, and in what circumstances, water management charges should be fixed or variable, or a combination of fixed and variable.
- The scope of charges. We considered whether we should extend NOW's charges to basic water rights holders (such as stock and domestic rights holders), and set new charges for special categories of entitlement, such as floodplain harvesting, high flow and supplementary water.
- The level of the minimum bill.
- The price path and whether or how price increases should be limited.

Each of these decisions is discussed further in Chapter 6.

2.2.5 Allocate the user share of NOW's total efficient costs to individual water users across water sources and valleys

Having determined the user share of NOW's total notional revenue requirement, and made the decision to set valley based prices, the next step was to attribute a portion of this aggregate user share to each valley (by water source). Given that NOW does not record actual costs on a valley basis, this involved allocating the total users share of costs to each valley (by water source), using the best available cost driver (or allocator) for each activity code.

Our decisions in relation to this step are discussed in Chapter 7.

2.2.6 Convert user share costs for each valley into prices, using forecasts of entitlement and usage volumes

Once user share costs for each valley (by water source) were determined, the next step in our process was to convert these costs into prices. Given our decision to set a mixture of 1 and 2-part tariffs, comprised of fixed charges (per ML of entitlement or unit share) and usage charges (per ML of water extracted), this required determining and applying forecast entitlement and extraction (or 'usage') volumes.

Our decisions in relation to each of these steps are discussed in Chapter 8.

We note that extraction volumes are inherently uncertain. If extraction volumes are greater than forecast then NOW will receive greater than expected revenue, and will recover more than the user share of its costs through prices. On the other hand, if extraction volumes are less than forecast then NOW will receive less revenue than expected, and will recover less than the user share of its costs. As Chapter 4 will discuss, we have decided not to provide NOW with a revenue volatility allowance to account for differences between actual and forecast extraction levels. We consider that NOW should initiate dialogue with the NSW Government if it wishes to seek funding for any revenue shortfall due to lower than forecast extraction volumes.

2.3 Decide on meter service and reading charges

Meter service and reading charges are intended to recover the efficient costs that NOW incurs in maintaining government-installed meters, reading user-owned meters, resolving disputes over meter accuracy and validating relocated meters. These charges are for unregulated river and groundwater users only, as meter service charges for regulated river users were included in the 2010 State Water Determination.

In setting meter service and reading charges, we:

- determined the efficient cost of operating and maintaining the meter fleet that NOW intends to install under the NSW metering project, as well as the efficient costs of reading user-owned meters, resolving disputes over meter accuracy and validating relocated meters
- considered whether these costs should be recovered through separate meter service and reading charges on the user with a meter in place; or include the costs within the general operating expenditure base, whereby they would be recovered from all users via water management prices
- considered whether the meter service charge should vary by meter type or be based on a weighted average of the costs of the different types of meters to be installed
- reviewed the decisions made in the 2010 State Water Determination regarding State Water's meter service charges, to ensure consistency with this determination, where appropriate.

Our decisions on the meter service and reading charges are discussed in Chapter 10.

2.4 Decide on consent transaction charges

Consent transaction charges are intended to recover NOW's efficient costs of assessing and issuing water access licences (granting rights to a share of available water) and works approvals (granting approval for the construction of water management works, such as bores, dams, etc).

Consent transaction charges are based on forecasts of the labour hours needed to complete a transaction and the cost of that labour. Therefore, in setting these charges, we assessed whether:

- the times proposed by NOW to complete the transactions were reasonable and efficient, by examining the tasks associated with completing consent transactions
- the forecast costs of the labour used in completing consent transactions was consistent with the demands and level of complexity of the different types of transactions that NOW undertakes.

Our decisions on consent transaction charges are discussed in Chapter 11.

2.5 Assess the impact of our pricing decisions

In setting prices, we aimed to balance the need for NOW to recover its efficient costs of undertaking its water management activities – which ultimately protect the property rights of water users – and the goal of achieving fair and acceptable outcomes for all stakeholders. For example, we aimed to minimise price shocks and adverse impacts on water users and to ensure that users funded no more than their appropriate share of water management costs, while ensuring that NOW remains financially viable. Therefore, in assessing the impact of our pricing decisions, we focused on potential impacts on water users and NOW's forecast level of cost recovery.

In assessing potential impacts on water users, we considered forecast sample water bills, and estimates of water bills as a proportion of farm costs. We also considered the ability of water users to mitigate the impact of higher water prices, through trading entitlements.

In relation to potential impacts on NOW, we note that under this draft determination NOW's forecast revenue from prices covers approximately 94% of the user share of its forecast costs by 2013/14. The remaining efficient costs are expected to be recovered from the NSW Government.

Our analysis of the impact of our draft pricing decisions is discussed in detail in Chapter 12.

2.6 Decide whether we should establish reporting or other regulatory measures over the determination period

The final step in our approach to setting prices for this determination was to decide whether to establish reporting or other regulatory measures, in light of issues identified by us or stakeholders throughout the course of the 2006 Determination period and this price review.

Our findings and recommendations in relation to such measures are presented in Chapter 13.

3 Specific activities included in estimating the costs to be recovered through water management charges

NOW's water management charges are levied on those that hold entitlements for water from regulated rivers, unregulated rivers and ground water sources, including town councils, industrial users, environmental water holders and irrigators. These charges should reflect the costs of the water management activities NOW undertakes on behalf of WAMC to ensure that NSW's water resources are managed so that all users, including the environment, have access to sustainable water supplies over the long term, and the resources are shared appropriately between these users.

However, only some of these water management activities can properly be considered in setting NOW's water management charges: those that are government monopoly services, as defined in the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004* (the Water Services Order). NOW's submission did not transparently explain how it identified these monopoly water management activities and their associated costs. As several stakeholders noted, the submission described NOW's activities and responsibilities very broadly, and did not clearly define the outputs of these activities.[26] This made it difficult for both IPART and stakeholders to assess NOW's pricing proposal.

Therefore, as the first step in our approach for setting water management charges, we:

- Asked our consultants, PwC, to examine NOW's assessment of its monopoly services – as defined in the Water Services Order - and the costs associated with providing those services. We then considered NOW's information and PwC's findings and recommendations, and made a draft decision on the activities to be included in setting prices.
- Considered PwC's observations on the integrity of the information NOW provided, and recommended action to improve this information for the next price review.
- Consolidated the available information on NOW's proposed monopoly service activities and the expected outputs of these activities over the 2011 Determination period into a clear statement of deliverables (the Monopoly Services Outputs Schedule). We consider that this schedule will provide a 'baseline' from which water users, IPART and the Government can assess NOW's performance over this determination period.

[26] See, for example, submissions to this price review from NSW Irrigators' Council (15 June 2010) and Murray Irrigation Limited (16 June 2010).

The section below provides an overview of our draft decision on which of NOW's activities should be included in this price determination. The subsequent sections discuss NOW's broad water management responsibilities and activities, our considerations in deciding which activities to include in setting prices, and our considerations on the integrity of the information NOW provides. The final section outlines the key activities and outputs included in NOW's Monopoly Service Outputs Schedule.

3.1 Summary of draft decision on which NOW activities to include in setting prices

Draft decision

2 IPART's draft decision is to accept PwC's recommendations on the NOW activities that are monopoly water management services and so should be included in setting prices.

PwC found that most of the activities included in NOW's submission and pricing proposal were monopoly water management services. The only exceptions were activities associated with coordinating metropolitan water planning. PwC found that some of these activities were not consistent with the definition of government monopoly services in the Water Services Order, and therefore should not be included in setting prices. Based on the description of these activities provided by NOW, it recommended that 50% of the 7 full-time equivalent (FTE) staff positions attributable to these activities be excluded.

PwC also made several observations about NOW's financial and management systems, which raise serious concerns about the integrity of its reporting and the quality of the information it provides to IPART for determining prices. To address these concerns, we have recommended that the Minister for Water require NOW to update its financial management systems to ring fence all expenditures associated with its monopoly water management services before we commence our next price review (see section 3.4 below).

3.2 NOW's water management responsibilities and activities

NOW undertakes a broad range of water management responsibilities, only a portion of which can be classified as monopoly services for the purposes of this price determination. For instance, NOW has reported that, as at October 2009, its staff totalled 619 FTEs, of which 256 (or 41%) were working on IPART regulated, monopoly service activities.[27] NOW's broad water management responsibilities include:

- determining the volume of water available for allocation each year to towns, water users and the environment, particularly during times of severe water shortage
- ensuring that all users, including the environment, have access to sustainable water supplies
- developing statutory Water Sharing Plans, which set the rules for sharing water between users, and between users and the environment
- negotiating inter-state and national water agreements, particularly those related to the significant institutional changes occurring in the Murray-Darling Basin
- approving the extraction and use of water, and the policies and procedures for the permanent trade of water entitlements and the annual trade of available water
- coordinating the development of metropolitan, town and non-urban water policy, and
- monitoring the quantity, quality, and health of aquatic ecosystems and water extractions.[28]

NOW groups the activities it undertakes to fulfill these responsibilities into 9 main functions:

- water planning and implementation of interstate programs
- surface water and groundwater management
- water licensing and compliance
- implementation of major water infrastructure projects
- water information and modelling
- science and evaluation
- policy and regulation of local water utilities
- coordination of metropolitan water planning, and
- provision of legal advice on water matters to the government.[29]

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27 NOW presentation to the public hearings, 19, 22 and 23 July 2010.

28 www.water.nsw.gov.au/About-Us/default.aspx, accessed 24 September 2010.

29 PricewaterhouseCoopers/Halcrow Pacific *Final Report, Review of the NSW Office of Water's water management expenditures*, 30 June 2011, p 65.

However, only some of the activities NOW undertakes for these functions are consistent with the definition of monopoly services under the Water Services Order.

3.3 IPART's considerations in deciding which services should be included in setting prices

Under the *Independent Pricing and Regulatory Tribunal Act 1992*, we are empowered to determine prices for 'government monopoly services' only. Clause 3 of the Water Services Order defines the bulk water 'government monopoly services' as those that involve:

- the making available of water
- the making available of WAMC's water supply facilities, or
- the supplying of water, whether by means of WAMC's facilities or otherwise.

However, it does not provide practical guidance on which water management activities should be considered monopoly services.

In interpreting this clause for this (and past) determinations, we adopted a broad interpretation of the phrase 'the making available of water' to include activities necessary to ensure water resources are managed on a sustainable basis to support long-term use. For example, we have included activities related to the assessment, allocation, planning, monitoring and reporting of water resources, as far as these activities are undertaken to ensure supply to users.

We also had regard to the objectives of the National Water Initiative (NWI), and the guidance this agreement provides on setting prices for water management services. For example, we have complied with the NWI's direction to exclude (when setting prices) any costs related to Ministerial and Parliamentary services and to the development and refinement of overarching policy frameworks from efficient costs.[30]

We then considered the activities NOW included (or excluded) in making its pricing proposal, and PwC's assessment of whether these activities are consistent with the definition of monopoly services in the Water Services Order.

3.3.1 The activities NOW included (or excluded) in making its pricing proposal

At one of the public hearings we held for this review, the NSW Commissioner for Water indicated that across the 9 water management functions (set out in section 3.2 above), government monopoly services accounted for:

- 41% of NOW's FTE's
- 46% of NOW's operating expenditure.[31]

30 National Water Initiative, Council of Australian Government *National Water Initiative Pricing Principles*, April 2010, p 14.

31 NSW Office of Water, Presentation to the Sydney public hearing, 23 July 2010.

NOW also provided advice that when preparing its pricing submission, it excluded all externally funded activities from the cost base, as well as those related to:

- management of the Snowy River's environmental flows
- corporate licensing
- Ministerial and Executive services
- Office of the Director General
- legislative matters
- Catchment Management Authorities
- Murray-Darling Basin Authority liaison
- inter-governmental activities
- Country Towns Water Supply
- sewerage program
- Cap and Pipe the Bores Program
- part of the groundwater drilling unit, which is operated on a commercial basis.

By implication, NOW considers that all of its remaining activities are consistent with the definition of monopoly services.

3.3.2 PwC's assessment of whether these activities are consistent with the definition of monopoly services

As part of its review of NOW's efficient operating expenditure, we asked PwC to assess the activities NOW included in making its pricing proposal, based on the information provided in NOW's submission.

PwC found that this information did not transparently explain how it calculated the costs associated with the activities it excluded from the regulatory cost base, and the sum of these costs. It also found that NOW's systems and procedures for separating the costs associated with its monopoly service activities from its broader suite of activities are inadequate. This made it difficult for PwC to determine whether NOW has made an appropriate and correct selection of activities for inclusion (or exclusion) in its regulated costs.

However, based on the available information, PwC found that most of the activities NOW included in its pricing proposal were consistent with the definition of government monopoly services. However, it found that one area of activity that NOW included was not entirely consistent with this definition: the coordination of metropolitan water planning. While NOW included activities in this area undertaken by 7 FTEs, PwC considered that while some of the activities undertaken by these staff were consistent with the definition of monopoly services, some were intended to ensure the security of water supply to urban water users – eg, activities

related to infrastructure planning, water recycling and demand management. These activities are not directly related to the making available of water or WAMC's water supply facilities, or the supply of water.

Based on these findings, PwC recommended that we include all the activities NOW included in its pricing proposal, except for those under the coordination of metropolitan water planning function. For these activities, PwC recommended that we include half the activities (or resources) NOW included in its proposal. As indicated above, we accepted these recommendations.

Table 3.1 summarises PwC's assessment and findings in more detail.

Table 3.1 PwC's assessment of the activities included in NOW's pricing proposal

NOW activities	Assessment against the Monopoly Services Order and other guidance	Comments
Water planning and implementation of interstate programs	The inclusion of these activities is consistent with the 'making available of water' requirement of the Water Services Order.	These water planning activities are concerned with establishing transparent frameworks for ensuring an appropriate balance between economic, environmental and public benefit outcomes. It aims to ensure the future sustainability of the resource and its supply to users.
Surface water and groundwater management	The inclusion of these activities is consistent with the 'making available of water' requirement of the Water Services Order. System operation activities, blue-green algae management and river works management activities are included on the basis that they arise from the supply of water from NOW's facilities.	These water management activities are concerned with operationalising and monitoring water plans to ensure they meet economic, environmental and social objectives.
Water licensing and compliance	The inclusion of these activities is consistent with the 'making available of water' requirement of the Water Services Order.	These activities are concerned with protecting the integrity of the entitlement system and the security of users' authorised access to water.
Implementation of major water infrastructure projects	These activities relate to State Priority Projects, which are yet to commence. However, assuming the projects proceed, the activities are consistent with the 'making available of water' requirement of the Water Services Order.	
Water information and modelling	The inclusion of these activities is consistent with the 'making available of water' requirement of the Water Services Order.	These activities directly relate to the assessment, monitoring and reporting of water resources to ensure their sustainability and continued use.

NOW activities	Assessment against the Monopoly Services Order and other guidance	Comments
Science and evaluation	The inclusion of these activities is consistent with the 'making available of water' requirement of the Water Services Order.	These activities directly relate to the assessment, monitoring and reporting of water resources to ensure their sustainability and continued use.
Policy and regulation of local water utilities	NOW's exclusion of urban water and wastewater policy and regulation functions is consistent with the Water Services Order.	Activities such as Country Towns Water Supply and Sewerage Program have been excluded by NOW from its Water Service Order cost base.
Coordination of metropolitan water planning	Based on the description of activities provided by NOW, PwC recommend including 50% of the 7 FTEs proposed by NOW. PwC conclude that some metropolitan water planning activities constitute water management activities consistent with the Water Services Order. However, there are a number of activities undertaken in the preparation of the Metropolitan Water Plan that PwC assess as *not* being water management activities under the Water Services Order, as they do not directly relate to the management of water resources.	NOW proposed including 7 FTEs directly attributable to metropolitan water planning. NOW indicated that these activities relate to the development and delivery of Sydney's Metropolitan Water Plan. Activities to ensure the security of supply to urban water users through infrastructure planning and demand management initiatives are not included under the Water Services Order.
Provision of legal advice on water matters to the government	The inclusion of legal activities related to water resource management is consistent with the 'making available of water' requirement of the Water Services Order.	PwC notes that it has received information that the allocated 10 FTEs represent only a share of NOW's total legal staffing (just more than half).
Corporate functions	The inclusion of these activities is consistent with the 'making available of water' requirement of the Water Services Order. It is also consistent with national guidance which requires an appropriate level of overheads to be included.	These activities indirectly support water planning and management functions of NOW.

Source: PwC, Final Report on its *Review of the NSW Office of Water's water management expenditure*, 30 June 2010, Table 4.1, pp 68-71.

3.4 IPART's considerations on the integrity of the information provided by NOW

In assessing the information provided by NOW, PwC also made a number of observations about NOW's financial and management systems. It noted that:

- NOW's approach for separating its expenditures on monopoly service activities from its other activities is based on an internal management consultation process. Thus, the information it provides to IPART is not the output of formalised procedures for financial reporting, or the output of ring-fenced accounts.

- The deficiencies of its financial and management systems make it difficult to determine whether the activities and associated costs NOW included in its pricing proposal are appropriate and correct.

These findings raise serious concerns about the integrity of NOW's reporting and the quality of inputs it provides for the price setting process. To address this for future reviews, we consider that NOW should be required to ring fence its expenditures associated with monopoly services before the commencement of the next price review.

It is apparent that in preparing its price submission, NOW has assumed that the costs of the monopoly services are equal to the residual of NOW's budget once all inconsistent activities were excluded. This approach is not robust. We expect that over the 2011 price determination period, NOW will implement systems for identifying and verifying its monopoly services. We expect that these systems will enable NOW to improve its annual reporting of its compliance with the 2011 Determination and its submission to the 2014 price review.

Draft finding

3 IPART recommends that the Minister for Water requires NOW to improve its financial systems and implement ring-fencing of all expenditures associated with its monopoly services, before the commencement of IPART's next price review.

3.5 Key activities and outputs included in NOW's Monopoly Service Outputs Schedule

Given the limited independent oversight of NOW's performance[32] and stakeholders' comments on the ambiguity of NOW's outputs, we have compiled a Monopoly Service Outputs Schedule. This schedule consolidates the information NOW provided in a range of documents for this review. It sets out NOW's proposed monopoly service activities for the 2011 Determination period and the expected outcomes of these activities. In compiling the schedule, we intended to create a 'baseline' for assessing NOW's performance over the coming determination period and beyond. The schedule is included as Appendix L.

32 NOW provided information to IPART about its current external reporting on 23 February 2010. This information identified that at that time there were 9 measures of Monopoly Services that were monitored via its Annual Report. In addition, IPART notes that NOW reported against 1 measure that was externally verified under the 2008 State Plan reporting framework (since changed) and measured water trade process times and number of water sharing plans gazetted via the National Water Commission's Biennial Assessment.

The efficient costs associated with activities and outputs listed in the Monopoly Service Outputs Schedule are included in the cost base used for setting prices. NOW is expected to deliver all of these activities and outputs, or to provide sound reasons for varying its activities and outputs over time. Examples of such reasons might include, in times of flood or drought, a change in water resource management priorities that results in other unplanned outputs being delivered.

Key actions in NOW's Monopoly Service Output Schedule include:

- Expanding the hydrometric network by 128 stations to a total of 513 by 2014/15, and increasing the frequency of visits to these stations to 6 visits a year to improve the monitoring information available to NOW and users.
- Completing the Water Sharing planning process and its implementation by:
  - completing the remaining inland 18 Water Sharing Plans by 2013
  - completing the 20 remaining coastal valley Water Sharing Plans by 2013
  - revising all existing Water Sharing Plans for Murray Darling Basin River resources by 2014 to enable 'accreditation' of existing plans with the Basin Plan
  - reviewing and remaking a total of 31 existing Water Sharing Plans before 2014, prior to their 10-year expiry date
  - implementing the rules under more than 80 water sharing plans across NSW.
- Publishing and implementing outstanding operational plans and policies, including:
  - the Floodplain Harvesting Policy and rules for issuing floodplain harvesting licences
  - the Reasonable Use Guidelines for Basic Landholder Rights Holders to address unconstrained extraction by stock and domestic rights holders
  - the Policy for Return Flow Credits for extractive uses
  - rules and processes for controlled allocation of unassigned water to licensed users
  - aquifer interference rules and guidelines to inform and manage licensed extractive industries
  - planning rules for surface and groundwater interception and extraction
  - rules for stormwater harvesting
  - rules for groundwater trading in embargoed water sources.
- Ensuring that 90% of transactions for the permanent transfer of access licences are processed within 28 days
- Ensuring that 60% of all other transactions and approvals are processed within 3 months.

In the course of this review, stakeholders have expressed concerns that key outputs of the 2006 Determination period were not achieved. Specifically, stakeholders highlight that only a portion of water sharing plans targeted for completion by 2009 have been gazetted.[33] NOW has provided detailed information about its deliverables since 2006, in response to criticisms of its performance over the 2006 Determination period. This information is included as Appendix J.

In relation to the delivery of water sharing plans, NOW has provided the following explanation:

> One of the criticisms we have had in the past, in terms of completing the submission, is why the water sharing plans were not completed by 2010 as required. As we require $55 million per year for water management activities, that would have enabled 311 staff to be appointed on water management activities, and … because we have not achieved $55 million per year, because the price path to recovery and reduced revenue has been substantially smaller, we have had a commensurate staff of only 256 people, 55 short on requirement.[34]

We acknowledge that NOW's revenue has been less than expected over the 2006 Determination period. However, we also note that we set prices to recover the *efficient* level of costs likely to be incurred in delivering identified services. On the assumption that the Government would fund its share of the efficient costs, we expected the (then) Department of Natural Resources would undertake and deliver the identified activities and services, including the targeted water sharing plans, in accord with the efficient level of cost determined by IPART – even if this required the achievement of operational efficiencies relative to the Department's cost proposal to the 2006 price review.

For the 2011 Determination, IPART has again assumed that NOW will deliver all the proposed water management activities and outputs (set out in the Monopoly Service Outputs Schedule) that underpin the calculation of allowed efficient costs. This is on the assumption that the NSW Government will fund its share of NOW's efficient monopoly service costs, including our assessment of the Government's share of NOW's contributions to the MDBA. IPART's estimate of the total cost of delivering these water management activities and outputs efficiently is the sum of the forecast revenue to collected from users (via water management prices) and our forecast of revenue to be contributed by the NSW Government.[35]

As Chapter 13 will discuss, IPART expects that NOW will report progress against the Monopoly Service Outputs Schedule annually. IPART will publish NOW's reports. In addition, IPART will publish its assessment of NOW's performance in an annual report on all IPART regulated water agencies.

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33 For example, see submissions from Lachlan Valley Water (June 2010) and the NSW Irrigators' Council (June 2010).

34 Commissioner for Water (NOW), Transcript of Wagga Wagga Public Hearing, 19 July 2010, pp 11-12.

35 IPART's calculation of the revenue expected to be provided by the NSW Government is set out in Chapter 1.

Where unforseen events necessitate changes in priorities; NOW is expected to provide reasons for variations, including the identification of the new, unplanned outputs.

4 The total efficient costs of providing NOW's monopoly water management services

Once we decided on the monopoly water management services to be included in setting water management charges, we calculated the total, efficient cost NOW is likely to incur in providing these services over the 2011 Determination period. This amount is known as the notional revenue requirement, and it is funded by the government and water users. (Chapter 5 outlines our assessment of the user share of NOW's total efficient costs of providing its monopoly water management services - ie, the user share of NOW's notional revenue requirement).

As Chapter 2 discussed, we used the building block method to calculate the notional revenue requirement. To apply this method we determined the 3 main cost building block components:

- NOW's forecast efficient operating expenditure over the 2011 Determination period
- having made the decision to establish a regulatory asset base:
  - we determined an allowance that will allow NOW to earn an appropriate return on the asset base it uses in delivering the monopoly water management services (the allowance for a return on assets)
  - we determined an allowance that will allow NOW to earn an appropriate return of this asset base (the allowance for regulatory depreciation).

In addition, we included an allowance for NOW's forecast contributions to the Murray-Darling Basin Authority (MDBA) and the Border Rivers Commission (BRC) over the determination period. We then summed the 3 cost building block components and the allowance for these forecast contributions to give the notional revenue requirement.

This process involved considering and making findings on a number of issues, including:

- the efficient level of NOW's forecast operating expenditure
- the opening value of the asset base NOW uses to deliver the monopoly water management services (the regulatory asset base, or RAB) and its annual value over this period
- the appropriate rate of return on the RAB to use in calculating the allowance for a return on assets

- the appropriate depreciation method and asset lives to use in calculating the allowance for regulatory depreciation
- the appropriate allowance for forecast contributions to the MDBA and the BRC
- whether or not to include a revenue volatility allowance to manage the risk of actual metered usage varying from forecast metered usage.

In general, in making these findings, we considered NOW's cost and expenditure proposal, the findings and recommendations of PwC's review of this proposal, and stakeholder comments.

The section below summarises our draft decision on NOW's notional revenue requirement – ie, its total efficient costs of delivering its monopoly water management services. The subsequent sections discuss each of the draft findings that underpin this decision.

4.1 Summary of draft decision on NOW's notional revenue requirement

Draft decision

4 IPART's draft decision on NOW's notional revenue requirement in relation to monopoly water management services is as shown in Table 4.1 below.

Table 4.1 Draft decision on NOW's notional revenue requirement ($'000, 2009/10)

	2011/12	2012/13	2013/14
Forecast efficient operating expenditure	49,696	51,645	53,041
Allowance for return on assets	69	200	330
Allowance for regulatory depreciation	49	147	246
Allowance for forecast contributions to MDBA	16,551	15,153	16,878
Allowance for forecast contributions to BRC	406	382	385
Total notional revenue requirement[a]	**66,772**	**67,528**	**70,881**

a Totals may not add due to rounding.

In addition to the findings shown in the table, this draft decision reflects our findings that:

- an opening value of zero is appropriate for NOW's RAB, due to concerns about NOW's asset management and capital planning frameworks
- the annual value of the RAB from 2011/12 onwards should be established by incorporating the forecast capital expenditure deemed to be efficient in each year of the determination period
- an appropriate rate of return for NOW over the determination period is 7.0% per annum
- for calculating the regulatory depreciation allowance, the straight-line depreciation method and average asset lives of 20 years are appropriate

- there is not sufficient justification for including a revenue volatility allowance, as NOW is not exposed to the same level of revenue volatility as State Water and other regulated businesses for whom we have provided such an allowance.

4.2 Forecast efficient operating expenditure

Operating expenditure accounts for the bulk of the total costs NOW incurs in providing monopoly water management services, and so has a major impact on the water management charges. This expenditure primarily comprises labour costs, so it can be expressed in dollars or full-time equivalent staff (FTEs).

To decide on the efficient level of forecast operating expenditure over the 2011 Determination period, we considered NOW's forecast operating expenditure over this period, PwC's findings and recommendations on how much of this forecast expenditure is efficient, and stakeholder comments on this forecast expenditure.

4.2.1 NOW's forecast operating expenditure

NOW's submission included proposed water management prices under 2 scenarios. Under Scenario 1, it based prices on what it considers to be its 'core' water management activities. Under Scenario 2, it based prices on these core activities plus the additional costs it will incur to implement the Commonwealth *Water Act 2007* and accelerate the national water reform agenda. It submitted that these additional costs should be included in setting water management charges if the Commonwealth does not provide additional funding for them.[36]

Table 4.2 and Table 4.3 set out NOW's forecast operating expenditure and FTEs under each of these scenarios. Table 4.2 shows that NOW proposes significant increases in its operating expenditure from 2009/10 to 2013/14 (about 21% under Scenario 1 and around 42% under Scenario 2). This reflects its view that it will require a significant increase in staff over the next few years to undertake its core (Scenario 1) water management activities, and a further increase to carry out additional activities in implementing the Commonwealth *Water Act 2007* and the national water reform agenda (Scenario 2).

[36] Although NOW has applied to have these additional costs funded by the Commonwealth, consistent with the 'no additional net cost' provisions in the 2008 Murray-Darling Basin Inter-Governmental Agreement (IGA).

Table 4.2 NOW's forecast operating expenditure ($'000, 2009/10)

	2009/10	2010/11	2011/12	2012/13	2013/14
Operating expenditure under Scenario 1	48,809	50,180	53,913	56,807	59,036
Additional operating expenditure under Scenario 2	0	10,370	10,370	10,370	10,370
Total operating expenditure	48,809	60,550	64,283	67,177	69,406

Source: NOW's Excel Information Returns to IPART, 24 December 2010.

Table 4.3 NOW's forecast FTEs (number)

	2009/10	2010/11	2011/12	2012/13	2013/14
FTEs under Scenario 1	256	267	285	304	319
Additional FTEs under Scenario 2		57	57	57	57
Total FTEs under Scenario 1 and 2	256	324	342	361	376

NOW reports that it currently has 256 FTEs undertaking water management activities, and that it will require an additional 63 FTEs by 2013/14 for its core (Scenario 1) water management activities, and a further 57 FTEs per annum under Scenario 2. NOW's rationale for these additional resources is outlined further below.

NOW's need for additional FTEs under Scenario 1

NOW submitted that the proposed increase in its FTEs under Scenario 1 is driven by the following factors:

- the operation and maintenance of its expanded hydrometric network (which includes 128 new and 58 upgraded gauging stations)[37]
- the operation and maintenance of its upgraded surface water databases[38]
- increased monitoring of groundwater extractions, in response to increased extractions over recent years due to lower availability of surface water
- the scheduled development of an additional 38 Water Sharing Plans by 2012 and the requirement to implement these plans once they are gazetted
- the requirement to review and remake 31 Water Sharing Plans before 2014, prior to their 10-year expiry date
- the implementation of rules for water sharing plans across NSW

[37] The Commonwealth Government is paying for the capital costs of the expanded hydrometric network, but NOW will be responsible for the ongoing operating and maintenance costs of these stations.

[38] The Commonwealth Government will provide capital funding for these database upgrades, but NOW will be responsible for their ongoing operation and maintenance.

- a significant increase in the number of compliance staff, in response to lower water availability, increasing competition for the resource, and the fact that additional water sharing plans will enlarge the absolute number of rules to monitor and enforce
- finalisation and implementation of key operational plans, guidelines and policies to address floodplain harvesting, domestic and stock rights, aquifer interference, water return flows, stormwater harvesting and daily extraction rights.[39]

We note that these cost drivers largely reflect the increasing complexity of water management and the need for greater rigour around designing, administering, and policing the entitlement system, given the increasing scarcity and value of water.

NOW's need for additional FTEs under Scenario 2

NOW submitted that the additional FTEs under Scenario 2 are needed to enable it to undertake a range of activities arising from Commonwealth water reforms (Table 4.4). These relate to:

- the provision of input on the Murray Darling Basin Plan (18.5 FTEs)
- implementation of the ACCC's new water trade, charge and market rules, which "could require the Office to individually license all extractors within irrigation corporations, private irrigation districts and trusts"[40] (9.4 FTEs)
- the requirement to apply national monitoring standards to the existing hydrometric network (385 gauging stations), which necessitates doubling the number of annual visits to these stations from 3 to 6 (6.1 FTEs)
- the development and implementation of formalised water shepherding arrangements (5 FTEs).

39 NOW's December 2009 submission, pp 39–42.
40 NOW December 2009 submission, p 53.

Table 4.4 NOW's proposed additional activities arising from Commonwealth reforms

Additional activities	FTEs	Total cost ($million)
Water monitoring to national standards	6.1	1.1
National water database	0.7	0.1
Research Strategy – National Water Knowledge and Research Plan	1.0	0.2
Guidelines for sustainable extraction	1.8	0.3
Enhancing water markets	2.1	0.4
National Water Market Systems	1.0	0.2
National hydrological modelling strategy	1.0	0.2
Structural adjustment	3.0	0.5
National water accounts	2.5	0.4
Environmental water management - shepherding	5.0	0.9
Basin Plan - planning	18.5	3.4
Compliance to national standard	2.0	0.4
ACCC – development and implementation	9.4	1.7
Legislative amendments	0.3	0.1
Systems for urban water consumption reporting	1.0	0.2
Assessment of Water Purchase	2.0	0.4
Total	57.4	10.5

Note: NOW's December 2009 submission lists forecast additional Scenario 2 operating expenditure of $10.5 million, which is higher than the figure of $10.37 million in NOW's Excel Information Returns to IPART. We have assumed that NOW's correct proposed figure is $10.37 million.

Source: NOW's December 2009 submission, p 52, and NOW's 24 December 2009 Excel Information Returns to IPART.

4.2.2 PwC's review of NOW's forecast operating expenditure

In reviewing NOW's forecast operating expenditure, PwC:

- assessed the accounting methods and algorithms NOW used to calculate its cost forecasts, and
- conducted a strategic review of the efficiency of NOW's actual and forecast costs, which included (among other things) analysing a sample of activities in detail.

It also undertook some limited benchmarking, but was not able to draw firm conclusions, due to the limitations of the data. PwC's findings on NOW's forecast operating expenditure under each scenario are summarised below.

PwC's findings on operating expenditure under Scenario 1

PwC's review acknowledged that NOW's operating environment is becoming more complex and demanding. It noted that the implementation of water reforms introduced over the last decade, including those identified by NOW for the 2011 Determination period (ie, the development of water sharing plans, stronger compliance frameworks, expanded metering and monitoring, and improved databases and water accounting), are increasing the demands on water resource managers. PwC also recognised that if the operational integrity of the property rights system for water is to be maintained and underlying confidence in this system supported, then this system needs to be accompanied by higher levels of measurement, monitoring, and enforcement.

However, PwC identified a number of concerns or issues with NOW's forecast operating costs, including the following:

- NOW has not adequately examined possibilities for using existing resources more effectively and efficiently. In some cases, it has not provided clear and demonstrable links between its planned activities and planned outcomes.
- In most cases, there is insufficient evidence of robust strategy or business cases underpinning forecast operating expenditure.
- Apart from an example of reallocating staff from water plan implementation to water sharing plan development, there is no other clear evidence that consideration has been given to the possibility of reallocating staff resources from existing activities that are being scaled back to new areas of work that require higher priority.
- There is no documented evidence that levels of service have been 'stress tested' – for example, to determine what would happen to outcomes if resources were reduced by some plausible level, or what additional outcomes could be delivered from an increase in resources applied to an activity.
- The link between performance information and timelines, cost, quantity, quality, and the achievement of strategic objectives is, in many instances, not clear and, in others, absent altogether.
- No allowance has been made for progressive efficiency gains in any of the direct operating activities.
- The unit overhead rate per FTE is assumed to remain constant, despite some overheads and indirect costs being fixed in nature and unlikely to increase with additional staff.[41]

41 PwC Final Report on its *Review of the NSW Office of Water's water management expenditure*, 30 June 2010, pp 7 - 8.

In addition, PwC's detailed analysis of a sample of NOW's activities suggests that there are inefficiencies in NOW's existing deployment and allocation of staff resources across activities. For example, PwC identified the following specific concerns:

- The reported outputs for 'Operational Planning' (one completed policy guideline) do not appear to be commensurate with the FTEs (20 to 25) that have been working in this area over the past 4 years (although progress has been made in drafting other guidelines and policies).[42]
- There is no evidence of a clear and transparent strategic framework for guiding compliance activities over the past 4 years.
- The delay in water sharing plan development over the last 4 years (in part due to NOW waiting for greater clarity about the Murray Darling Basin Plan requirements) should have freed up staff resources for other activities, but there is no evidence of this or of alternative outcomes that have been achieved.
- NOW has not identified potential cost savings to its operational budget as a result of its capital investments in groundwater and water quality databases, or the telemetry systems and installation of data loggers on gauging stations – all of which should reduce labour costs.[43]

Table 4.5 lists PwC's recommended levels of efficient operating expenditure for NOW over the determination period under Scenario 1. It indicates that in PwC's view, NOW can reduce its operating expenditure by between 8.9% and 11.2% over the period (relative to its forecast expenditure). The recommended efficient level of expenditure incorporates the following adjustments to NOW's forecasts:

- Reducing the corporate overhead and indirect cost unit rate to account for an error in NOW's calculation in regard to the assumed annual number of hours per FTE.
- Removing 1.3 Business Administration FTEs from the cost base, as no case has been made for this increase from 2008/09 to 2009/10.
- Removing 3.5 Metropolitan Water Planning FTEs from the cost base, as PwC considers that at least a portion of NOW's Metropolitan Water Planning section is not consistent with the terms of the Monopoly Service Order (as discussed in Chapter 3).

42 While NOW contested this conclusion in the course of the public hearings, we note that NOW's own submission (Appendix 1, p 101) reports that it has completed 1 published guideline compared to a target of 10.

43 PwC Final Report on its *Review of the NSW Office of Water's water management expenditure*, 30 June 2010, pp 10 - 11.

- Removing 18.3 FTEs from the cost base whose time is 'unallocated' to any specific water management activity. We note that, at the Public Hearings, NOW argued against this adjustment by stating that it was difficult to allocate the time of all FTEs to specific water management activities, as some FTEs are involved in working on multiple activities throughout a day. However, PwC states that this recommended adjustment to the cost base is primarily intended to act as a proxy for a number of concerns it has regarding the efficiency of NOW's existing deployment and allocation of staff (which are identified above).
- Reducing by 20% NOW's forecast additional FTEs to account for scope for efficiency and productivity gains; the expectation that some resources should be freed up from existing activities to service new areas of business; concerns about the lack of clear business cases to support NOW's proposals for additional resources; and the absence of documented strategic decision making processes.
- Reducing by 25% the corporate overhead and the indirect cost unit rate (per FTE) to be applied to all additional resources from 2010/11, to reflect the fact that some overhead costs will be fixed in nature and unlikely to increase proportionally with staff numbers.
- Applying a 0.5% ongoing annual efficiency improvement to reflect the expectation that NOW should be able to make continuous improvements to its service delivery. This would include improvements to staff productivity, streamlining of administrative tasks, and reallocating resources from under-performing parts of the business.

Table 4.5 PwC's recommended operating expenditure ($'000s, $2009/10)[a]

	2009/10	2010/11	2011/12	2012/13	2013/14
NOW's current operating expenditure (allowed under the 2006 Determination)	45,256[b]				
NOW's proposed operating expenditure	**48,809[c]**	**50,180**	**53,913**	**56,807**	**59,036**
1. Reduction for inconsistencies in overhead unit rate	-245	-245	-250	-267	-280
2. Reduction due to Business Administration	-176	-175	-173	-173	-173
3. Reduction due to Metro Water	-475	-470	-465	-465	-465
4. Reduction of unallocated FTEs	-2,481	-2,458	-2,433	-2,433	-2,433
5. Reduction due to 20% reduction in new FTEs		-295	-758	-1,263	-1,675
6. Reduction due to fixed overhead costs for additional FTEs		-92	-228	-380	-503
Total reduction in operating expenditure	-3,377	-3,735	-4,306	-4,980	-5,530
Adjusted operating expenditure	45,432	46,445	49,607	51,827	53,507
7. Reduction due to efficiency adjustment of 0.5% pa		-232	-495	-774	-1,062
PwC's recommended operating expenditure[d]	**45,432**	**46,213**	**49,112**	**51,054**	**52,445**
Percentage reduction in total operating expenditure, relative to NOW's proposal	-6.9%	-7.9%	-8.9%	-10.1%	-11.2%

a Excludes MDBA and BRC costs.

b 'Allowed' costs used by IPART to set 2009/10 prices in the 2006 Determination.

c NOW's forecast/actual costs for 2009/10.

d Totals may not add due to rounding.

PwC's findings on operating expenditure under Scenario 2

In reviewing NOW's proposed Scenario 2 operating expenditure, PwC did not consider whether NOW's proposed Scenario 2 activities should be funded by the Commonwealth on the basis that they are additional to NOW's core water management functions.[44] Rather, PwC was concerned with whether the activity complies with the definition of monopoly service under the Water Services Order, and whether NOW's proposed costs for each activity are efficient.

[44] On 18 October 2010, IPART published an appendix to PwC's Report, which outlined the consultant's review of NOW's proposed Scenario 2 expenditure. When PwC's Report was published in July 2010, IPART did not publish this appendix, at NOW's request. NOW had asked that the appendix be treated on a confidential basis while negotiations with the Commonwealth to fund these activities were in progress. Following consultation with NOW, IPART has made the decision to publish this information so as to ensure that adequate information is available to stakeholders to assess IPART's draft report.

As Table 4.6 indicates, PwC recommended significant reductions to NOW's proposed additional Scenario 2 costs. While NOW proposed additional expenditure of about $10.4 million per annum, PwC found that the efficient level of this additional expenditure is about $4.3 million per annum. This is largely due to PwC's finding that the efficient number of forecast FTEs required to undertake the additional Scenario 2 activities is 28.6, compared to NOW's proposed 57.4. Depending on the particular activity, this reduction reflects PwC's views that there is double counting between FTEs in Scenario 1 and 2, that reasonable efficiency gains should offset the need for additional resources, that the activity should not be classed as a monopoly service, or that it is the subject of external funding.

PwC's adjustments to FTEs numbers are outlined further in Table 4.7 below. PwC's other recommended reductions to NOW's Scenario 2 costs (which are consistent with its recommended adjustments to Scenario 1 operating costs) include:

- a downward adjustment to remuneration costs
- a 25% reduction in the overhead unit rate to reflect the likelihood that a number of overhead costs are fixed as opposed to variable
- a 4% annual efficiency gain in corporate overheads
- a 0.5% annual reduction in total expenditure to reflect the need and expectation for efficiency gains in the delivery of services.

Table 4.6 PwC's recommended additional operating expenditure for Scenario 2 ($million, 2009/10, and FTEs)

	2010/11	2011/12	2012/13	2013/14
NOW's proposed additional FTE's	57.4	57.4	57.4	57.4
NOW's proposed additional expenditure ($m)	10.4	10.4	10.4	10.4
Recommended FTE's	28.6	28.6	28.6	28.6
Adjusted expenditure before 0.5% efficiency gain ($m)	4.4	4.4	4.4	4.4
Adjusted expenditure after 0.5% efficiency gain ($m)	**4.41**	**4.35**	**4.33**	**4.31**

Source: PwC Final Report, Appendix on Scenario 2, p 10.

Table 4.7 PwC's recommended adjustments to NOW's additional resources requested under Scenario 2

Additional activities	NOW proposed FTEs	PwC adjustment and rationale
Water monitoring to national standards	6.1	Nil adjustment
National water database	0.7	Nil adjustment
Research strategy – National Water Knowledge and Research Plan	1	Nil adjustment
Guidelines for sustainable extraction	1.8	100% reduction as this activity should be absorbed within the forecast expansion in operational planning costs incurred as part of Scenario 1.
Enhancing water markets	2.1	100% reduction. This activity relates to higher service standards for processing water trades, which should be built into normal, expected efficiency gains.
National Water Market Systems	1	100% reduction. NOW has advised that this is an externally funded program, so should not be incorporated into the regulated cost base
National Hydrologic Modelling Strategy	1	Nil adjustment.
Structural adjustment	3	100% reduction. This activity constitutes negotiations with the Commonwealth for structural assistance. It is not a monopoly service.
National Water Accounts	2.5	Nil adjustment.
Environmental Water Management – Shepherding	5	Nil adjustment
Basin Plan – Planning	18.5	70% reduction to correct for apparent double counting, as NOW's Scenario 1 costs include extra resources for reviewing 31 water sharing plans by 2014 and making these consistent with the Basin Plan.
Compliance to national standards	2	100% reduction as it is not clear how the national standards differ from what NOW is proposing under Scenario 1, which forecasts an additional 9.2 FTEs for increased compliance.
ACCC development and implementation	9.4	50% reduction in requested FTEs to reflect scope for better utilisation of existing operational planning staff, plus more efficient use of the additional resources forecast under Scenario 1.
Legislative amendments	0.3	100% reduction, as not consistent with the definition of monopoly services.

Additional activities	NOW proposed FTEs	PwC adjustment and rationale
Systems for urban water consumption reporting	1	100% reduction, as not consistent with the definition of monopoly services.
Assessment of water purchase	2	Nil adjustment
Total	**57.4**	**28.9 reduction**

Source: PwC Final Report, Appendix on Scenario 2, pp 7–9.

4.2.3 Stakeholder views on NOW's proposed operating expenditure

Scenario 1 operating costs

Stakeholders generally opposed NOW's forecast increases in its operating expenditure and proposed prices. Many cited comments or issues raised in the draft PwC report. Stakeholder concerns primarily relate to:

- Doubts or questions about the efficiency of NOW's current costs and its performance over the current determination period – particularly given its failure to complete the number of Water Sharing Plans envisaged at the last determination, the small number of policies and guidelines that it has produced, and its failure to issue bills to customers for several years.
- The lack of detailed explanation and justification provided by NOW in relation to its forecast increase in costs, including the minimal efficiency gains factored into these forecasts.

Examples of stakeholder comments in submissions include the following:

- The NSW Irrigators' Council (NSWIC) concurred with many of PwC's findings. However, it expressed concern that PwC was forced to make essentially random reductions to NOW's forecasts, due to a lack of information provided by NOW. To remove PwC's 'arbitrary reduction' from NOW's 'arbitrary' forecasts, NSWIC considers that IPART should only allow costs that are 'proven'.
- Lower Macquarie Groundwater Irrigators Association (LMGIA) stated that NOW does not provide transparent and adequate information to support its proposal for significant price increases.
- Lachlan Valley Water noted that it had extreme difficulty in developing a response to NOW's submission, due to the lack of detailed information on expenditure.
- MidCoast Water stated that the derivation of NOW's costings is not transparent. In addition, contributions from other organisations to NOW's operating expenditure (including community service obligations) have not been clearly accounted for.

- Murray Irrigation argued that NOW has not provided sufficient evidence to support proposed price increases, and that NOW's approach to the IPART process has made it virtually impossible for water users to dissect and understand the drivers of price increases. It also suggested that the establishment of NOW within the super agency of the NSW Department of Environment, Climate Change and Water (DECCW) should have resulted in permanent administrative efficiency savings, and that NOW needs to explore ways of becoming a more efficient and effective organisation.
- Murrumbidgee Irrigation suggested that IPART consider limiting growth in NOW's prices to the change in the CPI until NOW demonstrates a clear need for additional resources.
- Tamworth Regional Council called on IPART to examine the extent to which NOW's existing resources are being used efficiently and, therefore, the extent to which additional resources are actually required.
- Bega Cheese argued that due to the limited information provided by NOW on its cost forecasts, price increases should be capped at CPI or no more than 5% per annum for the determination period. It also queried why NOW has factored in efficiency gains of 4% for overheads and indirect costs for each of the first 2 years of its proposed determination period, yet not for subsequent years.

Several stakeholders also noted that although they or other organisations carry out or contribute to water management activities and works, it is not clear how these activities or contributions relate to, or were accounted for, in NOW's cost forecasts. For instance:

- The Sydney Catchment Authority (SCA) stated that it pays non-regulated charges to NOW, which are related to water management services delivered by NOW, and also funds works and services required for NOW's water management directives. In the absence of information from NOW, the SCA is concerned that there is potential for NOW to 'double charge' – that is, to recover costs of some activities from non-regulated charges/contributions as well as from IPART regulated charges.
- Murray Irrigation and the State Water Coastal Valleys Customer Service Committee expressed concern with NOW's proposal to recover the costs of its expansion of the hydrometric network, given that hydrometric stations on regulated rivers are funded through charges from State Water and contributions from other organisations.
- NSWIC was concerned about NOW's forecasts of additional FTEs needed for compliance, given State Water's compliance activity.

Additional Scenario 2 operating costs

In their submissions to IPART, stakeholders expressed opposition to paying for any Scenario 2 costs that are not funded by the Commonwealth Government. The NSWIC pointed out that the NSW Government sought to protect itself with a 'no net costs' provision in the Intergovernmental Agreement, therefore IPART should reject NOW's recovery of any of these net costs from irrigators. Stakeholders also expressed concern about:

- The magnitude of these additional costs, which are comprised of an additional 57 FTEs or $10.4 million per annum. For example, NSWIC contended that a large number of projects listed under Scenario 2 are either not the responsibility of NSW or not the responsibility of water users.
- The lack of explanation or justification for these costs. Gwydir Valley Irrigators Association (GVIA) considered that it:

  …is contemptuous of NOW to try to justify an additional $10.5 million of annual expenditure supposedly associated with Commonwealth reforms with a page and a half in its submission.[45]

- The allocation of these costs. Several stakeholders, including Hunter Valley Water Users and Bega Cheese, were concerned that NOW appears to propose to allocate these costs across **all** valleys, including those outside the Murray Darling Basin.

4.2.4 IPART's conclusions on NOW's efficient level of operating expenditure

After carefully considering NOW's submission, PwC's findings and recommendations, and stakeholders' views, we concluded that NOW's efficient level of operating expenditure will increase from approximately $45.4 million in 2009/10 to $53.0 million by 2013/14. This represents an increase of about $7.6 million, or 17%, over this period. In comparison, NOW forecast that its operating expenditure would increase to between $59.0 million (Scenario 1) and $69.4 million (Scenario 2) by 2013/14, which is between 11% and 31% higher than our findings.

45 Gwydir Valley Irrigators Association, submission, June 2010, p 26.

In reaching this conclusion, we accepted PwC's recommendations regarding NOW's Scenario 1 operating expenditure, with the following adjustments:

- We extracted the forecast costs of reading existing meters from PwC's recommended level of efficient operating expenditure. This is because, as outlined in Chapter 10, we consider that these costs should be recovered via a separate meter reading charge, rather than through general water management prices. In extracting these meter reading costs, we first applied PwC's recommended efficiency adjustments to NOW's forecast meter reading costs to reflect the fact that we are extracting these costs from PwC's recommended efficient cost base.[46]
- We added approximately $1.8 million per annum of NOW's Scenario 2 costs. This is for expenditure on 'Water monitoring to national standards', 'Research Strategy – National Water Knowledge and Research Plan', 'National Hydrologic Modelling Strategy', 'National Water Accounts', and 'Assessment of water purchases'. We have included this expenditure in NOW's cost base as it meets all of the following criteria:
  - PwC has found that this expenditure is efficient and consistent with the Monopoly Service Order
  - preliminary correspondence from the Commonwealth to NOW indicates that the Commonwealth has made a definite decision that it will not be funding these activities
  - this expenditure is not subject to any other separate funding processes
  - we consider that these activities are consistent with best practice water management and the definition of monopoly water management services in the Water Services Order – ie, we view these costs are part of NOW's core (Scenario 1) costs.

We note that PwC's recommendations, and our subsequent adjustments to NOW's proposed operating expenditure, are not based on the view that NOW should cut back or curtail its planned water management activities and levels of service. Rather, they reflect our finding that there is scope for NOW to realise efficiency gains. That is, assuming an optimum allocation and use of resources, we consider that NOW will be able to deliver all its proposed water management activities, and that service levels should not be adversely affected by our decision to reduce its forecast operating expenditure. As described in Chapter 3, we have consolidated NOW's promised service deliverables into a schedule and made a draft decision to request NOW to report against it annually.

[46] For example, in 2011/12, PwC has reduced NOW's Scenario 1 operating expenditure by 8.9% (from $53.9 million to $49.1 million). Therefore, in determining the value of meter reading costs to extract from PwC's recommended cost base, we have also reduced NOW's forecast meter reading costs in that year by 8.9% (from $1.36 million to about $1.24 million).

Table 4.8 IPART's draft findings on NOW's efficient operating expenditure ($'000s, $2009/10)[a]

	2009/10	2010/11	2011/12	2012/13	2013/14
PwC's recommended Scenario 1 operating expenditure	45,432	46,213	49,112	51,054	52,445
PwC's recommended Scenario 2 operating expenditure for activities not subject to Commonwealth funding		1,847	1,820	1,811	1,802
Meter reading costs extracted from cost base[b]		-1,250	-1,236	-1,220	-1,206
IPART's draft decision on operating expenditure[c]	**45,432**	**46,809**	**49,696**	**51,645**	**53,041**

a Excludes MDBA and BRC costs.

b Meter reading costs in existing cost base, after adjusting for PwC's recommended changes to cost base.

c Totals may not add due to rounding.

4.3 Opening and annual values for the regulatory asset base

Decisions on the allowances for a return on assets and for regulatory depreciation are key inputs to the building block. Generally, these allowances are derived by multiplying the annual value of the RAB by an appropriate rate of return (to give a return on assets) and by dividing this annual value by the weighted average life of the assets in the RAB (to account for depreciation).

However, for the 2006 Determination, we did not establish a RAB or allow a return on assets. Rather, we set prices to provide NOW with a depreciation allowance, and this allowance related primarily to post 1997 groundwater bores. However, for this determination, we have established a RAB for NOW. We note that this is consistent with the approach used for setting prices for other regulated entities. We also consider that this will enhance the transparency of the price setting process.

After reaching the decision to establish a RAB, we considered the opening and annual values for the RAB. In doing so, we considered:

- Information provided by NOW on its actual capital expenditure over the 2006 Determination period, and PwC's findings and recommendations on the level of this expenditure that was prudent and efficient.
- Information provided by NOW on its forecast capital expenditure over the 2011 period, and PwC's findings and recommendations on the level of this expenditure that is efficient. (Note that for both actual and forecast capital expenditure, only expenditure funded by NOW is included. All assets funded by third parties, such as the Commonwealth Government, are excluded.)
- NOW's proposal on the opening value for its RAB (ie, as at 1 July 2011), and PwC's findings and recommendations on the robustness of NOW's asset management and capital planning frameworks.

4.3.1 NOW's actual capital expenditure over the 2006 Determination period

Over the 2006 Determination period, NOW's actual capital expenditure was $10.1 million, which was similar to the $9.9 million ($2009/10 real) we allowed for in making the determination (Table 4.9).

Table 4.9 NOW's actual capital expenditure compared to that allowed for in the 2006 Determination ($ million, $2009/10)

	2006/07	2007/08	2008/09	2009/10	Total[a]
2006 Determination	4.7	4.3	0.9	0.0	9.9
Actual	1.3	2.4	3.4	2.9	10.1
Variation[a]	-3.4	-1.8	2.5	2.9	0.2

a Totals may not add due to rounding.

Source: PwC/Halcrow, *Review of NSW Office of Water's Water Management Expenditure*, Final Report, June 2010, p 161.

This actual capital expenditure was on 3 programs:

- **Groundwater monitoring**, which included construction of new NOW owned bores, the purchase of metering instruments (data loggers and salinity probes) and expenditure to commission the assets.
- **Water extractions monitoring - metering and data systems,** which were intended to deliver metering and site reconnaissance to quantify the magnitude and timing of water extractions from unregulated rivers and groundwater systems.
- **Corporate water databases,** to store water management data and to improve public access to the data. This includes a telemetry system, and development of groundwater and water quality databases (Table 4.10).

The 2006 Determination included expenditure on the first 2 of these programs, while the third program wasn't included as it was expected to be completed by 2005/06.

Table 4.10 NOW's actual capital expenditure by program ($ million, 2009/10)

	2006/07	2007/08	2008/09	2009/10	Total [a]
Groundwater monitoring	0.8	2.1	3.1	1.7	7.8
Corporate databases	0.4	0.1	0.1	0.3	0.9
Water extractions monitoring - metering & data systems	0.1	0.2	0.2	0.9	1.4
Total capital expenditure[a]	1.3	2.4	3.4	2.9	10.1

a Totals may not add due to rounding.

Source: PwC/Halcrow, *Review of NSW Office of Water's Water Management Expenditure*, Final Report, June 2010, p 161.

In reviewing NOW's actual capital expenditure, PwC found that, in general, the projects undertaken were necessary to enable NOW to meet its strategic objectives and legislative requirements. The only exception was the **water extractions monitoring – metering and data systems** project. PwC was unable to gain assurance that investment in this project has been prudent and efficient, to date.

However, PwC also commented that:

> …the absence of detailed business cases for most projects has meant that we have been unable to confirm with certainty that all of the decisions to invest have been prudent and have contributed to delivery of NOW's monopoly services and water management objectives.[47]

For the purposes of setting prices, it recommended the following 2 adjustments to NOW's actual capital expenditure over the 2006 Determination period:

- exclude the metering and data systems project from NOW's RAB until such time as it is able to demonstrate that the expenditure has contributed to its monopoly services and water management objectives, as it is unclear that the expenditure incurred to date will actually contribute to planned project outcomes
- transfer half of the proposed 2009/10 expenditure on the groundwater monitoring program to 2010/11, to account for likely delays (given NOW's delivery track record).

Table 4.11 below summarises PwC's recommendations on NOW's actual capital expenditure over the 2006 Determination period.

Table 4.11 PwC's recommendations on the level of actual capital expenditure that was prudent and efficient ($ million, 2009/10)

	2006/07	2007/08	2008/09	2009/10
NOW's 2009 submission	**1.34**	**2.42**	**3.41**	**2.94**
Adjustment for likely program delays to Groundwater Monitoring				(0.86)
Adjustment for non-prudent expenditure on Metering and data systems	(0.05)	(0.21)	(0.25)	(0.92)
PwC's recommendation[a]	**1.28**	**2.21**	**3.16**	**1.16**

a Totals may not add due to rounding.

Source: PwC/Halcrow, *Review of NSW Office of Water's Water Management Expenditure*, Final Report, June 2010, p 165.

4.3.2 NOW's forecast capital expenditure over the 2011 Determination period

NOW's forecast capital expenditure over the 2011 Determination period (Table 4.12) is primarily for the replacement and refurbishment of NOW's hydrometric station assets. We note that while the Commonwealth is contributing towards funding the expansion of NOW's hydrometric network, the expenditure shown in Table 4.12 relates only to NOW's expenditure (consistent with all other cost figures presented in this chapter).

47 PwC/Halcrow, *Review of NSW Office of Water's water management expenditure*, 30 June 2010, p 164.

Table 4.12 NOW's forecast capital expenditure ($ million, 2009/10)

	2010/11	2011/12	2012/13	2013/14
Corporate water database	0.07			
Water extraction monitoring – metering and data systems	1.07			
Hydrometric network renewals	1.52[a]	2.03	2.03	2.03
Total	**2.66**	**2.03**	**2.03**	**2.03**

a NOW advised that its cost estimate for hydrometric network renewals n 2010/11 as contained in its original submission and information returns was out by a factor of 10, and should in fact be $1.52 million rather than $152,000, as shown above (correspondence from NOW to IPART, 23 February 2010).

Note: Excludes the groundwater monitoring program, as it is due to be completed by 2009/10.

Source: NOW information returns.

In reviewing this forecast capital expenditure program, PwC found that the proposed renewals program is efficient, although it noted that this should be confirmed with the development of a robust business case. It also stated that it will be necessary to ensure that expenditure "is targeted towards those assets most critical to enabling NOW to meet its water management objectives."

Table 4.13 below lists PwC's recommendations on the level of forecast capital expenditure that is efficient. These recommendations incorporate:

- an adjustment to expenditure in 2010/11 to allow for carryover from 2009/10 to account for likely delays to the groundwater monitoring project (mentioned above)
- adjustments to NOW's forecast expenditure on hydrometric network renewals to:
  - correct for an error in NOW's submission for 2010/11, which understated required expenditure in this year by a factor of 10
  - account for the latest estimate of stations to be delivered under the Hydrometric Network Expansion project.[48]

Table 4.13 PwC's recommendations on the level of forecast capital expenditure that is efficient ($ million, 2009/10)

Capital expenditure	2010/11	2011/12	2012/13	2013/14
NOW's submission	1.29	2.03	2.03	2.03
Adjustments				
Deferral of expenditure from historical schemes	0.86			
Adjustment to hydrometric network renewals cost estimate (corrected no. of gauging stations)	1.37	-0.07	-0.07	-0.07
PwC's recommendations [a]	**3.52**	**1.97**	**1.97**	**1.97**

a Totals may not add due to rounding.

Source: PwC/Halcrow, *Review of NSW Office of Water's Water Management Expenditure*, Final Report, June 2010, p 168.

48 NOW's expenditure estimate for this renewals scheme takes into account the increase in the hydrometric network assets that will result from the Commonwealth funded 'Hydrometric Network Expansion' project.

4.3.3 NOW's proposal on the opening value for its RAB

IPART's July 2009 Issues Paper asked NOW to provide information on the basis for its proposed RAB, in the event that we decided to establish a value for its RAB for the purposes of earning a return on assets and depreciation.

NOW's December 2009 Excel Information Returns to IPART, on which the prices in NOW's submissions were based, listed an opening RAB value of about $29.5 million as at 1 July 2010. However, NOW's written submission did not explain the basis for this figure. In subsequent correspondence, NOW provided a further 2 amendments to this initial RAB value: $35.7 million and then $34.3 million.[49]

We understand that, essentially, the original figure of $29.5 million was derived by multiplying the depreciation allowance included in the 2006 Determination – which was based primarily on post 1997 groundwater assets – by an assumed average asset life of 25 years. The 2 amended figures were derived by the same broad methodology, but adjusted to reflect NOW's estimates of its actual capital expenditure over the 2006 Determination period.

To assist us in considering the appropriate opening value for NOW's RAB, we asked PwC (as part of its review of the prudency and efficiency of NOW's capital expenditure) to review NOW's asset management and capital planning frameworks. These frameworks are important, as we consider that the RAB's value should reflect efficient and prudent capital investments only, as it is not appropriate to expect consumers to pay for the inefficiencies of a regulated agency. In addition, we consider that robust asset management and capital planning frameworks play an important role in ensuring that capital expenditure is prudent and efficient.

In regard to asset management, PwC found that:

- NOW's asset management practices are not consistently applied across its assets and there are no formal documented asset management plans or detailed records on asset condition, lives or asset failures
- activities to maintain assets are not generally prioritised, with maintenance occurring on an ad hoc basis, only when sufficient resources are available
- currently, no asset renewals program exists, although NOW has proposed the hydrometric network renewals program as part of its submission to this price review (see above).

In relation to capital planning, PwC found that there is:

- no standardised approach to capital planning and project management
- a lack of documentation of project planning and delivery, including sufficient documentation of changes to outcomes or deliverables
- little evidence of investment appraisal and prioritisation of expenditure.

49 Correspondence from NOW to IPART, 29 April 2010.

In terms of the last point, PwC noted that:

> For the majority of projects that we reviewed, no business cases exist. Hence, there is little information to demonstrate the evaluation and justification of these projects. In addition, expected deliverables and outcomes have not always been defined. In the absence of a business case, it is not easily possible to demonstrate or assess the prudence of investment decisions. Furthermore, without any baseline by which to measure and track outcomes, it is difficult to assess with any certainty the efficiency and effectiveness of project implementation.
>
> Where business cases have been provided, the information included falls short of best practice. For example, little information was available to demonstrate that NOW has undertaken any form of cost benefit analysis or cost effectiveness analysis when evaluating project proposals.
>
> ….it is not clear how NOW assesses and prioritises its capital expenditure to ensure that it is targeted to achieve the most beneficial outcomes, or whether the prioritisation is based on any form of risk assessment.[50]

In response to its findings, PwC recommended that NOW:

- Develop and implement an asset management framework that is consistent with best practice, including collecting information on the age and condition of its assets to enable it to better demonstrate that its expenditure proposals are justified.
- Review its capital planning framework to identify those areas where it currently falls short of best practice – to provide confidence that its capital expenditure is appropriately targeted and prioritised, and that capital expenditure is prudent and efficient.

We note that PwC's findings and recommendations on NOW's asset management and capital planning frameworks are similar to those of the consultants we engaged for the 2006 water management price review. In 2006, Halcrow Pacific found that the asset management systems of NOW (then the Department of Natural Resources) did not provide asset condition data, which is still the case. Similarly, PB Associates noted that it was important for NOW to develop an asset management strategy that provides a long-term optimised replacement program for bores and other monitoring equipment. On this basis, PB Associates recommended that NOW provide an asset management plan based on NSW Treasury guidelines as part of NOW's submission to the 2011 price review. NOW did not provide this plan and PwC's findings indicate that NOW has made little or no progress in improving its asset management and planning framework.

50 PwC/Halcrow, *Review of NSW Office of Water's water management expenditure*, 30 June 2010, p 157.

4.3.4 IPART's draft findings on the opening and annual values of NOW's RAB

Given PwC's concerns about NOW's asset management and capital planning frameworks – which relate to the capital expenditure NOW incurred prior to and during the 2006 Determination period – we cannot confidently quantify the prudent and efficient value of NOW's existing asset base and thus determine whether user funding of this asset base is appropriate. We note that NOW's provision of 3 separate proposed opening RAB values during this price review underscores the consultants' concerns about the integrity of NOW's systems.

We also considered relevant findings of the 2006 Determination – namely, the findings of PB Associates'[51] and Halcrow's[52] reviews of NOW's (then DNR's) asset management and capital planning framework. These consultants found that this framework did not meet best practice and suggested that fundamental elements of efficient capital planning and asset management, such as asset management plans that can designate asset condition, were required.[53] PwC's recent findings confirm that NOW has yet to address these issues.

Therefore, we found that it was appropriate to set the opening value for NOW's RAB, as at 1 July 2011, at zero. We then calculated the annual value of the RAB over the 2011 Determination period by adding NOW's forecast capital expenditure that was deemed efficient by PwC (outlined in Table 4.13 above).

As outlined below, we have derived the allowances for a return on assets and regulatory depreciation for the 2011 Determination from these annual values of the RAB. However, before these values are 'locked in', we will review the actual expenditure incurred over this period as part of the next price review. Only the level of expenditure deemed prudent and efficient at that time will be incorporated in establishing the opening value of the RAB for the 2014 Determination. We strongly urge NOW to implement PwC's recommendations for improving the robustness of its asset management and capital planning, discussed above.

4.4 Appropriate rate of return and allowance for a return on assets

In setting prices for regulated entities, our usual practice (and that of regulators in other jurisdictions) is to include an allowance that ensures the entity earns an appropriate rate of return on the capital it has invested to conduct its regulated operations (ie, its RAB). This allowance is intended to represent the opportunity cost of that capital – ie, the value that society could have obtained by using these resources for other purposes. Therefore, the allowance for a return on capital is

51 PB Associates, *Review of Capital and Operating Expenditure of the Department of Natural Resources* - prepared for IPART, March 2006, available at: www.ipart.nsw.gov.au.

52 Halcrow Pacific, *Provision of Advice on Recommended Capital and Operating Expenditure for the 2006 Bulk Water Price Review of State Water Corporation and the Department of Natural Resources*, prepared for IPART, May 2006, available at: www.ipart.nsw.gov.au.

53 For instance, PB Associates (p 9) recommended that DNR provide an asset management plan based on NSW guidelines "as part of the next price submission."

important in ensuring that prices are cost reflective. In turn, this is important for ensuring that resources are used efficiently, and that efficient future investment occurs.

IPART's 2006 Determination of NOW's prices provided an allowance for depreciation, but no return on assets. This was because NOW did not request a return on assets at the time. For the 2011 Determination, NOW has proposed an allowance for a return on assets.

NOW's proposal on rate of return and allowance for a return on assets

NOW's proposed allowance for a return on assets (Table 4.14) is based on its proposed opening RAB value of $29.5 million, rolled forward to include its forecast capital expenditure over the 2011 Determination period, and a 7.9% (real pre-tax) rate of return. NOW indicated that its proposed 7.9% rate of return was based on the rate State Water requested during IPART's 2010 Determination of its prices. NOW noted that:

> …the justification for this rate is included in State Water's submission to IPART.[54]

Table 4.14 NOW's proposed allowance for a return on assets ($'000, 2009/10)

	2011/12	2012/13	2013/14
NOW's proposed return on assets	2,351	2,344	2,325

Source: NOW Excel Information Returns to IPART, 24 December 2009.

Stakeholder submissions on NOW's return on assets

Water users strongly opposed NOW receiving a return on its assets, primarily on the basis that it is a government agency, performing regulatory functions, and does not operate like a commercial business. They argued that the main reason for allowing a return on assets is to compensate for the risk associated with investing in large capital infrastructure. They noted that:

- NOW does not own significant capital infrastructure, and the infrastructure it does own is for the common good, which shouldn't earn a return. For example, several stakeholders asserted that NOW should not earn a rate of return any more than other public services, such as schools, hospitals and the police should, and that allowing NOW to earn a return on assets is akin to introducing a tax.[55]
- NOW doesn't operate using practices consistent with a commercial entity.[56]

54 NOW December 2009 submission to IPART, p 33.

55 For example, NSW Irrigators Council submission to IPART, June 2010; Bega Cheese submission to IPART, June 2010; and the Local Government Shires Association submission to IPART, June 2010.

56 NSW Irrigators Council submission to IPART, June 2010; and Bega Cheese submission to IPART, June 2010.

- NOW's risk management strategy is not to spend on capital unless it has the funding, so there is no risk.[57]
- PwC's findings on NOW's capital asset management and planning practices suggest that NOW isn't ready to adopt a RAB approach to pricing, so shouldn't get a return on capital.[58]
- NOW needs to provide a justification for a return other than to demand the same as State Water.[59]

IPART's draft findings on NOW's rate of return and allowance for a return on assets

While we recognise that stakeholders are opposed to a rate of return, we have provided NOW with such a return because we consider that the opportunity cost of capital should be reflected in prices. This is important for ensuring that resources are allocated and used efficiently, and that efficient capital expenditure occurs.

Table 4.15 lists our findings on NOW's annual allowance for a return on its assets. This was calculated by multiplying the annual value of NOW's RAB – based on our draft finding on this value, discussed in section 4.3.4 above – by a WACC of 7.0%. The basis for using a WACC of 7.0% is discussed in Appendix M.

As mentioned above, we also note that this is consistent with the decisions of IPART and other economic regulators across a range of industries, covering both privately owned and government owned regulated entities.

Table 4.15 IPART's draft finding on allowance for return on assets ($'000, 2009/10)

	2011/12	2012/13	2013/14
Allowance for return on assets	69	200	330

4.5 Appropriate depreciation method, asset ages and allowance for regulatory depreciation

The allowance for regulatory depreciation may be more appropriately described as an allowance for the 'maintenance of assets'. IPART and other regulators generally provide this allowance recognising that through the provision of services to customers, a utility's capital infrastructure will wear out, and that the cost of maintaining the capital base is a legitimate business expense.

To calculate regulatory depreciation, we use the straight-line depreciation method. This means that the total value of an asset is recovered evenly over its assumed life. It also means that the depreciation allowance is essentially calculated by dividing the RAB by the weighted average asset life of the assets that comprise the RAB.

57 Lachlan Valley Water submission to IPART, June 2010.
58 Murrumbidgee Irrigation submission to IPART, June 2010.
59 Ibid.

4.5.1 NOW's proposed allowance for regulatory depreciation

NOW's proposed annual depreciation allowance over the 2011 Determination period (Table 4.16) is based on its proposed opening RAB value of $29.5 million, rolled forward to include its forecast capital expenditure over the 2011 Determination period, and its proposed weighted average of the remaining lives of the assets that comprise this RAB (10 years).

Table 4.16 NOW's proposed allowance for regulatory depreciation ($'000, 2009/10)

	2011/12	2012/13	2013/14
NOW's proposed depreciation allowance	2,122	2,326	2,529

Source: NOW Excel Information Returns to IPART, 24 December 2009.

4.5.2 IPART's draft findings on allowance for regulatory depreciation

As section 4.3 discussed, our draft findings are that the appropriate opening value for NOW's RAB is zero, and that the annual value for this RAB over the 2011 Determination period should be calculated by adding the forecast capital expenditure that PwC has deemed to be efficient (ie, the values for hydrometric network renewals listed in Table 4.13 above).

In addition, we have made a draft finding that the appropriate average asset life for NOW's RAB is 20 years, rather than 10 years as NOW proposed. This finding reflects PwC's assessment of the asset lives of NOW's hydrometric network assets (Table 4.17 below).

As a result, our draft finding on the allowance for regulatory depreciation (Table 4.18) is substantially lower than NOW proposed.

Table 4.17 Hydrometric network asset lives (years)

Asset type	Assumed life in NOW's proposal	PwC's assessment
Electronic and sensing equipment	5	5-15, average of 10
Civil infrastructure	20	50+
Support vehicle based equipment	Ranges from 5 to 15, with an average of 10	Range froms 5 to 15, with an average of 10

Source: PwC/Halcrow Final Report on its *Review of NSW Office of Water's water management expenditure*, 30 June 2010, p 202.

Table 4.18 IPART's draft finding on allowance for regulatory depreciation ($'000, 2009/10)

	2011/12	2012/13	2013/14
Regulatory depreciation allowance	49	147	246

4.6 Allowance for forecast contributions to the Murray Darling Basin Authority and the Dumaresq-Barwon Border Rivers Commission

The NSW Government is obligated to contribute to the costs of 2 cross-jurisdictional water management bodies – the MDBA and the BRC. Box 4.1 outlines the role of these bodies. As noted in NOW's December 2009 submission, NOW will fund about $29 million per year (plus any change in the CPI) until 2010/11 for the MDBA, and about $1.1 million per annum for BRC. The funding of the MDBA after 2011/12 is subject to a proposed strategic review of the MDBA's future programs.[60]

Box 4.1 Overview of the MDBA and the BRC

The MDBA is responsible for planning the integrated management of water resources in the Murray-Darling Basin (the Basin). In December 2008, the MDBA assumed responsibility for all functions of the former Murray-Darling Basin Commission (MDBC). Key functions of the MDBA include:

- preparing the Basin Plan, which will set limits on water that can be taken from surface and groundwater systems across the Basin[61]
- advising the Federal Minister for Water, Sustainability and the Environment on the accreditation of state water resource plans
- developing a water rights information service to facilitate water trading across the Basin
- measuring and monitoring water resources in the Basin
- gathering information and undertaking research
- engaging the community in the management of the Basin's resources.[62]

Along with other states in the Murray-Darling Basin, the NSW Government pays a share of the MDBA's water management costs.

The BRC was created by the NSW and Queensland Governments to control and coordinate the water available from the rivers around the border of the 2 states, and is funded by these governments. Its main functions are to:

- determine the anticipated quantity of water available from the system and notify the states of the amount of water they may divert and use
- control the construction, operation and maintenance of works under its remit.

60 At the public hearings, NOW indicated that this review is likely to focus on the effectiveness of the MDBA's programs and activities, rather than the level of contributions from the states.

61 The first Basin Plan is expected to commence in 2011.

62 Source: www.mdba.gov.au/about_the_authority, accessed 18 June 2009.

NOW's forecast MDBA and BRC contributions

NOW's submission noted that NSW's total annual contributions to the MDBA and BRC are split between NOW and State Water in line with each body's ratio of water management activities to river operations activities. It also indicated that as the MDBA's focus on water resource management has increased significantly, NOW's contribution to this body for the 2011 Determination period will increase significantly, relative to its contribution over the 2006 Determination period.[63]

NOW's forecast contributions to the MDBA and BRC over the 2011 Determination period are listed in Table 4.19 below.

Table 4.19 NOW's forecast contributions to the MDBA and BRC ($'000s, $2009/10)

	2011/12	2012/13	2013/14
Contributions to the MDBA	16,551	15,153	16,878
Contributions to the BRC	406	382	385

Source: NOW's Excel Information Returns, 24 December 2009; and updated information provided by NOW for 2013/14 MDBA contribution, per correspondence 23 February 2010.

IPART's draft findings on MDBA and BRC contributions

As the forecast contributions listed in Table 4.19 reflect NOW's share of NSW's funding commitment to the MDBA and BRC, we accept that these costs are part of NOW's total notional revenue requirement.

However, as Chapter 5 discusses, for this draft determination we have decided not to include an increase in the **user share** of MDBA costs in prices, due to an absence of information that indicates that such **user** contributions are efficient and consistent with the **impactor pays** principle.

4.7 Revenue volatility allowance

In its 2010 Determination, IPART provided State Water with a revenue volatility allowance. This was because a significant proportion of its forecast revenue (about 60%) is at risk through variations in water availability and hence levels of extraction.

In its presentations at the public hearings, NOW requested a revenue volatility allowance, similar to that received by State Water, if IPART did not accept its proposal for 100% fixed charges.

63 NOW's December 2009 submission, p 46.

After considering this request, we have made a draft finding that including a revenue volatility allowance for NOW is not justified, primarily because it is not exposed to the same level of revenue volatility as State Water. Under this Draft Determination, we estimate that approximately 20% of user share revenue is tied to NOW's usage charges, compared to around 60% for State Water.

We also note that the revenue volatility allowance for State Water provides it with revenue to recover the holding costs required to borrow funds to conduct its business in years of revenue shortfalls. However, as a government department rather than a State-owned Corporation, NOW cannot borrow funds like State Water. Therefore, the revenue volatility allowance provided in the 2010 Determination for State Water is not applicable to NOW.

If NOW does experience a significant shortfall in revenue as a result of lower than forecast levels of water extractions, we consider that NOW should initiate dialogue with the NSW Government if it wishes to seek funding for this shortfall.

5 Share of NOW's total efficient costs to be recovered from users through water management charges

Once we decided on the full, efficient costs NOW is likely to incur in providing water management activities over the determination period, the next step in our approach for setting water management charges was to decide on the appropriate share of these costs to be recovered from water users. To do this, we allocated NOW's costs between users and the Government (on behalf of the broader community) using the **impactor pays** principle. Under this principle, costs are allocated according to which of these 2 parties created the cost, or the need to incur the cost. We then set prices to recover only the user share of costs.

We favour the impactor pays principle because it ensures that water users face all of the costs of their activities, including any environmental costs that are a consequence of those activities. This is consistent with principles of efficient pricing and inter-governmental agreements on cost recovery. It is also the approach applied in the 2006 Determination. (Box 5.1 explains the difference between the impactor pays principle and the beneficiary pays principle, which is important when considering the allocation of NOW's costs.)

The section below summarises our draft decision on the share of costs to be recovered from users. The subsequent sections discuss NOW's proposed user share of its costs, stakeholders' comments, and our analysis and conclusions.

5.1 Summary of draft decision on user share of NOW's total efficient costs

Draft decision

5 IPART's draft decision is that the notional user share of NOW's total efficient costs (notional revenue requirement) to be recovered through water management charges is as shown in Table 5.1 below.

Table 5.1 Draft decision on user share of notional revenue requirement ($2009/10)

	2009/10	2011/12	2012/13	2013/14	Total (2011/12-2013-14)	User share as % of total revenue
Total user share	33,079	39,377	40,841	41,840	122,058	59%
Total user share (%)	66%	59%	60%	59%	59%	

Note: 2011 is omitted as the Determination will commence 1 July 2011.

This draft decision reflects our findings that:

- NOW's proposed user shares (as a % of costs) are appropriate, with the exception of the proposed user share of its contributions to the MDBA.
- In relation to its contributions to the MDBA, the user share should be the same as allowed for in the 2006 Determination ($1.69 million per annum). We expect that the remaining portion of NOW's proposed user share of this contribution will be funded by the NSW Government.

Box 5.1 The impactor pays principle

It is important to note the distinction between the **beneficiary pays** principle and the **impactor pays** principle. Under the beneficiary pays principle, charges would be paid by users on the basis of them **benefitting** from the service. In contrast, the **impactor pays** principle allocates costs to those ultimately responsible for creating the costs, or the need to incur the costs.

As an example, water users may not necessarily benefit (at least directly or in the short term) from the introduction of a water sharing plan that reduces their extractions. However, the need to develop and introduce that water sharing plan is at least partly the result of the actions, or impacts, of those water users.

5.2 NOW's proposed user shares

NOW uses a system of cost or activity codes to record its expenditure. It assigns costs to these codes and then determines a user proportion for each code, ranging from 0% to 100%. NOW reports this proportion based on the impactor pays principle and the activities covered by that code. The user share costs for each code are then summed to produce the user share of NOW's total costs. Table C.1 in Appendix C lists NOW's proposed user shares, by cost code, and the contribution that each cost code makes to NOW's forecast total costs for the 2011 Determination period.

For the 2011 Determination, NOW's proposal includes some changes to its cost codes, relative to those used in the 2006 Determination (Table 5.2). According to NOW, these changes are the result of:

- new services, which it has not provided in the past
- activities that were not previously classified, or
- the amalgamation or deletion of some past activities to better reflect the focus of its water management activities.

Regardless, on an individual activity or cost code basis, NOW argued that its proposal does not change the user share of costs. It noted that, where it has merged 2 or more 2006 cost codes, it has used the weighted-average of the user shares of these 2006 codes to calculate the user share for the new (2011) code. We also note that these codes relate to a relatively small proportion of NOW's costs over the 2011 Determination period.

Table 5.2 NOW's proposed cost shares for new cost codes

Cost code	Activity	NOW proposed user share	% total revenue requirement
C03-01	Metering operations	100%	2.0 %[a]
C03-02	Metering data management	100%	0%[a]
C07-05	Water industry regulation[b]	30%	1.1%
C12-03	Water laboratory assets renewal	50%	0%

a The percentage of total expenditure attributed to these cost codes is likely to increase substantially in future determinations, due to the large-scale rol1 out of meters.

b Water industry regulation involves legal and regulatory support for water management planning, including litigation and legislative advice.

Source: NOW December 2009 submission.

NOW's proposed user share for each year of the 2011 Determination period is shown in Table 5.3, in total and by each cost component of its notional revenue requirement. It indicates that new cost shares for the new cost codes range from 37% for MDBA costs to 95% for its return on assets. Under NOW's proposal, the overall user share of its costs rises from 66% in 2009/10 to 71% by 2013/14.

Table 5.3 also shows that NOW has proposed a significant increase in users' contributions to the MDBA – from $1.7 million in 2009/10 to around $6 million in each year of the 2011 Determination period.

Table 5.3 NOW's proposed user shares ($'000, $2009/10)

	2009/10	2011/12	2012/13	2013/14	Total (2011/12-2013-14)	User share as % of total revenue (2011/12-2013/14)
Operating Expenditure (Scenario 1)	30,257	40,838	42,851	44,285	127,974	75%
Operating Expenditure (Scenario 2)	0	8,801	8,801	8,801	26,402	85%
MDBA	1,693	5,969	5,965	6,082	18,016	37%
BRC	299	277	261	263	800	68%
Depreciation	830	1,911	2,053	2,196	6,160	88%
Return on assets	0	2,259	2,221	2,173	6,653	95%
Total user share	33,079	60,054	62,151	63,799	186,005	70%
Total user share %	66%	70%	71%	70%	70%	

a Totals may not add due to rounding.

5.3 Stakeholder comments on user shares

Some stakeholders expressed concern that the user share for some cost codes appears to be increasing. For example, Lachlan Valley Water noted that NOW proposed to increase the user share for C01-02 ('Surface water quantity data management and reporting') from 50% to 70%. Gwydir Valley Irrigators Association also expressed concern that the aggregation of cost codes may have increased the user shares that IPART set in the 2006 Determination.

In addition, many stakeholders expressed significant concern with the magnitude of the proposed increase in MDBA costs to be recovered from water users, and the lack of explanation and independent scrutiny of the efficiency of these costs. For example, Gwydir Valley Irrigators Association stated that:

> It is completely unacceptable that irrigators should be faced with an increase from $1.7 million to $6.5 million with no greater explanation than the MDBA is now placing a greater emphasis on resource management.[64]

Murrumbidgee Irrigation stated that there should be no increase in the user contributions to the MDBA, unless these contributions have been subject to a transparent efficiency audit. Similarly, Western Murray Irrigation and the NSW Irrigators' Council argued that MDBA contributions should not be incorporated into prices until these costs are subject to an independent efficiency assessment.

64 Gwydir Valley Irrigators Association, submission, June 2010, p 25.

5.4 IPART's analysis of user shares

We found some errors/inconsistencies in the cost shares outlined in NOW's written submission, relative to the Excel Returns it provided. We have used the cost shares in NOW's Excel Returns (which can be found at Appendix C) in our analysis. As noted below, we also found that these values addressed stakeholder concern about NOW's proposed increase in the user share of some of its cost codes.

Therefore, with the exception of the proposed user share of MDBA contributions, we found that NOW's proposed user shares for all of its cost codes were acceptable (as contained in its Excel Returns to IPART and listed in Appendix C). Our findings on user shares of NOW's costs are discussed further below.

5.4.1 Mapping NOW's 2006 cost codes to its 2011 cost codes

Once we mapped NOW's new cost codes back to its 2006 cost codes, we found that the user shares proposed by NOW for the 2011 Determination[65] correspond to those set by IPART in the 2006 Determination. We note that the user shares set in the 2006 Determination were developed and refined over 2 price determinations, drawing on stakeholder submissions, the work of consultants and IPART's own analysis.

For all consolidated cost codes, our analysis shows that there has been no change to the user share between the 2006 Determination and this determination. Where 2 cost codes have been aggregated, either the user share has not changed or there has been no material effect on costs allocated to users.

5.4.2 New activity codes

Given the nature of activities covered by NOW's new cost codes, we consider that NOW's proposed user shares for these costs are consistent with the impactor pays principle (see Table 5.2).

5.4.3 User share of MDBA and BRC contributions

As Chapter 4 noted, we were unable to assess the efficiency of NOW's total forecast contributions to the MDBA and BRC, due to insufficient information on these contributions.

In addition, NOW has not provided us with sufficient information to enable us to verify that its proposed user share of MDBA costs is consistent with the impactor pays principle. NOW has not adequately explained how its proposed user contributions relate to planned MDBA activities in NSW. It has also not provided documentation on how its proposed MDBA costs that have been allocated to cost codes.

65 As contained in NOW's Excel Information Return to IPART, rather than its written submission.

In relation to explaining the increase in the user share of MDBA costs, NOW's December 2009 submission simply stated:

> This submission includes the New South Wales component of the budgeted water management costs, while the costs of river operations are included in State Water's submission. The NSW Contribution has been allocated across the activities identified in the *MDBA Corporate Plan for 2009/10* and the *BRC Five-Year Plan* and these have guided the allocation of costs to the relevant Office water activity.
>
> The natural resource management component of the NSW contribution to MDBA has increased significantly compared to the 2006 Determination, which will correspondingly increase the water users' share of these costs. Previously, NSW's share of MDBA water management activities amounted to $3.7m, but this has now increased to $18 million for 2010/11 and slightly less for subsequent years, with the MDBA placing an increased focus on resource management. In 2009/10, $1.7m of MDBA resource management costs were sought from water users but it is now proposed to pass on $6.5m through water charges with the balance of $11.5m to be funded by the NSW Government.[66]

In response to our questions seeking further evidence of the efficiency of the MDBA contribution, NOW's Commissioner noted:

> In my capacity as a member of the Basin Officials' Committee I ensure the work of the MDBA is closely scrutinised and through the Murray Darling Ministerial Council we have recently requested review of the efficiency and effectiveness of the MDBA program delivery. However, I do not believe it is appropriate for the Office of Water to publicly release details of MDBA costs.[67]

At the Sydney public hearing, the MDBA noted that it could not reconcile NSW's contributions to the MDBA with MDBA expenditure on specific activities or programs, due to the relatively small size of this contribution relative to the MDBA's budget. While noting its increased emphasis on water management, it could also not identify what the increase in NOW's contribution (and the user share of this) relates to, in terms of specific water management activities and outcomes.[68]

The lack of information surrounding the efficiency and outputs of the MDBA contributions is particularly concerning, given the massive increase in this cost component. Under NOW's proposal, the increase in MDBA contributions accounts for approximately 15% of the increase in the user share of the notional revenue requirement. If accepted, this increase would have a substantial impact on prices.

As we cannot verify the efficiency of NOW's MDBA contribution, or confirm that its proposed user share is consistent with the impactor pays principle, we consider it appropriate to maintain the user share of NOW's MDBA contribution at the 2009/10 level ($1.69 million) for each year of the 2011 Determination period. This approach will minimise the potential for adverse outcomes for users, resulting from the recovery of inefficient costs.

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66 NOW December 2009 submission, p 46.

67 NOW supplementary submission, January 2010, p 1 - 2.

68 Sydney public hearing, presentation by Mr David Dreverman, Executive Director for River Murray at the MDBA, 23 July 2010, transcript available at: www.ipart.nsw.gov.au.

We will review the user share of MDBA costs if further information regarding the efficiency of MDBA expenditure and its consistency with the impactor pays principle is provided. In particular, to reconsider our draft decision, we would require further information on:

- the activities that NOW's proposed user share of MDBA contributions will fund
- how NOW's MDBA contributions have been assigned to cost codes, and hence how its proposed user shares have been determined
- evidence that NOW's proposed user share of MDBA contributions is efficient and consistent with the impactor pays principle.

We consider that NOW is best placed to obtain this information. We also consider that the NSW Government should fund the difference between our approved user share and NOW's total contribution to the MDBA.

NOW proposed a slight reduction in the user share of its BRC contributions over the 2011 Determination period, relative to the 2009/10 level. As this will act to reduce prices, we are satisfied that the lack of information will not have an adverse impact on customers. Therefore, we consider it appropriate to accept NOW's proposed user share of BRC contributions.

5.4.4 IPART's assessment of the efficient level of user costs

Taking the above findings into account, our draft decision on the user share of NOW's total notional revenue requirement and each cost component of this revenue requirement is shown in Table 5.4. Comparing the figures in Table 5.3 and Table 5.4, we can see that NOW proposed allocating about $186 million (or 71%) of its proposed costs to users over the 2011 Determination period, whereas our draft decision is to allocate approximately $122 million (or 59%) to users over this period.

Table 5.4 User share of revenue under IPART's draft decision ($2009/10)

Building block	2009/10	2011/12	2012/13	2013/14	Total (2011/12-2013-14)	User share as % of total revenue
Operating Expenditure (Scenario 1)	30,257	35,965	37,291	38,135	111,390	75%
Operating Expenditure (Scenario 2)	0	1,363	1,356	1,350	4,069	75%
MDBA	1,693	1,690	1,690	1,690	5,070	10%
BRC	299	277	261	263	800	68%
Depreciation	830	34	103	172	310	70%
Return on assets	0	48	140	231	419	70%
Total user share	33,079	39,377	40,841	41,840	122,058	59%
Total user share (%)	66%	59%	60%	59%	59%	

a Totals may not add due to rounding.

6 Price structure

After determining the share of efficient costs payable by users, the next step we took was to decide on the structure of water management charges. In particular, we considered:

- the geographic split of prices, including whether to continue to set prices on a valley basis for all water sources, or to move towards setting prices for groundwater based on 2 regions (coastal valleys and inland valleys)
- whether to set both fixed charges and variable usage charges where possible, and if so, what proportions of revenue should be raised via the fixed and variable components
- the price path, including whether to place a cap on annual individual bill increases
- the minimum bill level
- tariffs for special category licences, including Supplementary Water, High Flow, and Floodplain Harvesting licences
- rebates or discounts for large entitlement holders
- charges for basic landholder rights to water.

The section below summarises our draft decisions on these issues. The subsequent sections discuss each of the decisions in more detail.

6.1 Summary of draft decisions on price structure

After considering the above issues in relation to the structure of NOW's water management charges, we made draft decisions to:

- maintain valley-based prices for regulated and unregulated rivers, and transition from valley-based prices to an 'inland' and 'coastal' division for groundwater prices
- set 2-part tariffs, comprised of a fixed charge (per ML of entitlement or unit share) and a usage charge (per ML of water extracted), for regulated rivers, unregulated rivers and groundwater, where extraction is metered
- set 1-part tariffs, comprised of a fixed charge (per ML of entitlement or unit share), for unregulated rivers and groundwater, where extraction is not metered

- set the fixed and usage charge under each 2-part tariff so that 70% of forecast revenue from the 2-part tariff is recovered via the fixed charge and 30% via the usage charge, except for North Coast regulated rivers where this ratio is kept at current levels of 92% via fixed and 8% via usage
- set most prices so that forecast bills do not increase by more than 20% per annum (assuming forecast levels of usage) – the exception is prices for some groundwater users who move from a fixed charge only under the 2006 Determination to a fixed charge only under the 2011 Determination, as these users may face bill increases of greater than 20% for the first year of the new determination
- increase the minimum bill from $60 per licence to $95 per licence
- subject Supplementary Water (regulated river) and Floodplain Harvesting (regulated and unregulated river) licence holders to the usage charge under the 2-part tariff
- subject High Flow (unregulated river) licence holders to the minimum bill
- ensure that Supplementary Groundwater entitlement is charged based on entitlement available under the Available Water Determination and, if metered, usage
- not reintroduce rebates for large customers
- not set water management charges for basic rights holders, but consider this issue at the next determination.

6.2 Geographic split of prices

Draft decision:

6 IPART's draft decision is to maintain valley-based prices for regulated and unregulated rivers, and to transition towards an inland and coastal division for groundwater sources.

Under IPART's 2006 Determination, prices for each of the 3 water types (regulated rivers, unregulated rivers and groundwater) are set on a valley basis. For this draft determination, we considered whether this geographic split of prices should be maintained.

6.2.1 NOW's proposal on geographic split of prices

NOW proposed to maintain valley-based pricing for regulated rivers and unregulated rivers. However, for groundwater prices, NOW argued for the amalgamation of valleys into 2 areas: 'inland' and 'coastal'. This is on the basis that:

> …groundwater aquifers overlap a number of valleys and the cost drivers are not valley based but more closely aligned to the inland and coastal division.[69]

69 NOW December 2009 submission, p 65.

In presentations at the public hearings, NOW also noted that:

- there are 167 Groundwater Management Areas (GMAs) in NSW and it is not possible to assess costs on a GMA basis
- while groundwater aquifers overlap river valley catchments, aquifer boundaries are often unclear.

6.2.2 Stakeholder comments on the geographic split of prices

Stakeholders' submissions expressed a range of views on valley-based pricing in general, and groundwater in particular. Several opposed moving from valley-based groundwater prices to an 'inland' and 'coastal' split. They argued that such a price structure would result in cross-subsidisation and that NOW has provided very little justification or explanation for its proposal. For instance, Gwydir Valley Irrigators Association (GVIA) stated that:

> GVIA has always supported valley-reflective pricing, and therefore in the absence of any cost information from NOW demonstrating that costs are the same across all inland aquifers, and the same across all coastal aquifers; GVIA recommends the retention of the current system.

Similarly, Lachlan Valley Water (LVW) commented that:

> LVW opposes the proposal to amalgamate groundwater charges into only 2 regions – inland and coastal. To move to a standard charge across all inland valleys will result in a complete lack of transparency and probable cross subsidisation.
>
> …NOW has prepared 6 separate water sharing plans for groundwater sources in inland NSW, indicating that different management is required across these 6 major areas, and very probably that different levels of costs will be incurred.
>
> LVW strongly supports transparent, valley specific pricing for regulated, unregulated and groundwater sources.

Other stakeholders who expressed similar views include Lower Murray Groundwater Irrigators Association, Murrumbidgee Irrigation, High Security Irrigators-Murrumbidgee, and the NSW Irrigators' Council.

At the Sydney public hearing, Lachlan Valley Water also indicated that it would support groundwater pricing by water sharing plan area.

In contrast to the views outlined above, Tamworth Regional Council submitted that NOW's proposed move to 'inland' and 'coastal' groundwater prices is a step in the right direction. It also supported an 'inland' and 'coastal' split for regulated and unregulated rivers, or even state-wide prices for each water type. Similarly, Peel Valley Water Users and Stratharlie Pastoral Company argued that pricing should be the same throughout the state.

6.2.3 IPART's analysis on the geographic split of prices

We have decided to maintain valley-based prices for regulated and unregulated rivers, on the basis of aiming for prices that reflect costs as much as possible and enhanced cost transparency and accountability.

In principle, we have accepted NOW's proposal to move from valley-based groundwater prices to an 'inland' and 'coastal' split. We accept NOW's argument that groundwater aquifers do not align with surface water valleys and that it is not practicable to price by valley or, at this stage, water sharing plan area. However, to manage price shocks, we have decided to gradually transition from valley-based groundwater prices to the inland and costal split. This means that there will still be some variations in groundwater prices between valleys within these inland and coastal divisions over the 2011 Determination period.

Table 6.1 below summarises the arguments for and against the different options proposed by NOW and stakeholders on the geographic split of prices. We concluded that the arguments for NOW's proposed options and against the alternative options were the strongest.

Table 6.1 Arguments for and against various geographic splits of prices

Options	Arguments for	Arguments against
Uniform charges across the State	▼ Would overcome any uncertainty associated with NOW's method of allocating costs across valleys ▼ Many valleys within the MDB are interconnected. Therefore, there may be an argument that water management costs should or do not vary significantly across valleys ▼ Shares cost burden across users ▼ Simple and low cost to administer	▼ Not cost reflective, will result in cross subsidisation across valleys (to the extent that costs vary across valleys) ▼ Could be seen as a move away from NWI Pricing Principles, which require charges to be differentiated by catchment, valley or regions – where they vary significantly across these areas and where it is *practicable* ▼ Reduces costing transparency to stakeholder
Inland/coastal split (which approximates to Basin/non-Basin split)	▼ As above, but slightly more cost reflective ▼ For groundwater, NOW states that cost drivers are not valley based, but more closely aligned to the inland/coastal division ▼ Given the focus on the MDB, may also be an appropriate split of costs/prices for all water types	▼ As above, but slightly less cross subsidisation and slightly more transparency
Valley based prices	▼ Assuming NOW's method of cost allocation is accurate, will result in most cost reflective prices ▼ Enhances costing transparency for stakeholders, which ultimately helps in making NOW more accountable for its costs	▼ To the extent that there is uncertainty about NOW's cost allocation method, may result in some arbitrary price differences between valleys ▼ More costly and complex for NOW to administer

Options	Arguments for	Arguments against
		▼ For groundwater, NOW states that aquifers overlap a number of valleys and that cost drivers are not valley based, but more closely aligned to the inland/coastal division
Prices by water sharing plan	▼ This is NOW's primary water resource and geographic unit of management	▼ Water sharing plans do not yet exist in all areas ▼ When complete, NOW will have more than 80 water sharing plans. Hence, pricing system would be complex and costly to administer ▼ While some plans have specific geographic references meaningful to users, NOW's macro water sharing plans cover multiple water sources across diverse areas ▼ NOW/IPART does not currently have data to calculate prices with reference to WSPs

6.3 Fixed charges and variable usage charges

Draft decisions:

7 IPART's draft decisions are to set:

- 2-part tariffs, comprised of a fixed charge (per ML of entitlement or unit share) and a usage charge (per ML of water extracted), for regulated rivers, unregulated rivers and groundwater, where extraction is metered
- 1-part tariffs, comprised of a fixed charge (per ML of entitlement or unit share), for unregulated rivers and groundwater, where extraction is not metered
- the fixed and usage charge under each 2-part tariff so that 70% of forecast revenue from the 2-part tariff is recovered via the fixed charge and 30% of this revenue is recovered via the usage charge, except for North Coast regulated rivers where this ratio is kept at current levels of 92% fixed and 8% usage.

For each valley, water users are currently subject to one or 2-part tariffs, depending on their water source and whether they have a meter. For instance:

- all regulated river users are subject to a 2-part tariff comprising a fixed and a usage charge
- most unregulated river users are subject to a fixed charge only – apart from a very limited number of users that have a meter and have elected to be subject to a 2-part tariff

- groundwater users in 'Groundwater Management Areas' are subject to a 2-part tariff, comprising a fixed and a usage charge, while those outside these areas are subject to a fixed charge only.

In the 2006 Determination, we set prices so that, over the determination period, fixed charges recovered approximately 71% of forecast revenue from the 2-part tariffs for regulated rivers, 65% of forecast revenue from the 2-part tariffs for unregulated rivers, and 79% of forecast revenue from the 2-part tariffs for groundwater sources. However, these ratios varied across valleys. For example, for regulated rivers, this ratio varied from 48% for the Namoi to 92% for the North Coast.

The sections below outline NOW's proposal, stakeholder views, and IPART's analysis in relation to fixed and usage charges for the 2011 Determination.

6.3.1 NOW's proposal on fixed and usage charges

NOW proposed fixed (per ML of entitlement or unit share) charges only. Although as an alternative, and 'at a minimum', NOW's submission also presented prices for regulated rivers assuming a 70:30 split between its fixed and usage charges.[70] NOW argued for a 100% fixed charge regime on the following grounds:

- Its costs do not vary with the volume of water consumed. In fact, costs actually increase when water is scarce, due to the need to implement drought management strategies and conduct additional monitoring.
- The 2-part tariff was used in the past to send a price signal to reduce consumption. This is no longer necessary, since 90% of commercial water extraction is covered by water sharing plans and therefore open to trading of water – which is more effective in improving efficiency in water consumption than the prices charged by NOW.
- Fixed charges prevent any actual or perceived conflict of interest arising through a link between revenue and the amount of water made available to users.

NOW also pointed out that most unregulated river extraction is currently unmetered – although we note that this will change over the next few years with the expected roll out of Commonwealth funded meters (see Chapter 10).

6.3.2 Stakeholder submissions on fixed and usage charges

Stakeholders opposed NOW's proposal to recover 100% of its revenue via fixed charges, on the following grounds:

- Fixed charges discourage water conservation and the efficient use of water (Local Government and Shires Association, Wyong Shire Council and MidCoast Water).

[70] NOW's alternative proposal, however, does not equate to a strict 70:30 split for all regulated rivers. A number of valleys, including Murray, Murrumbidgee, North Coast, Hunter and South Coast, have a higher fixed to variable ratio under NOW's '70:30' scenario.

- Fixed charges would impact adversely on water users, as water availability risk would be transferred fully to users, who would have to pay full, fixed costs, often without having any actual water allocation. Some stakeholders argued that customer bills should be reduced when water sales are reduced (Local Government and Shires Association, Lachlan Valley Water, Murray Irrigation).
- 100% fixed charges would provide no incentive to NOW to pursue efficiency gains and would further disconnect NOW from the commercial realities/risks faced by water users (Western Murray Irrigation, NSW Irrigators' Council, Gwydir Valley Irrigators Association, Murrumbidgee Irrigation, Bega Cheese).
- At least one stakeholder disagreed that NOW's costs are 100% fixed regardless of the volume of water extracted. Lachlan Valley Water argued that there is a strong relationship between the volume of water usage and the amount of work required by NOW in monitoring groundwater sources.
- NOW requires Local Council water supply authorities to implement a 2-part tariff for the Council's water customers (Tamworth Regional Council and MidCoast Water).
- NOW has not provided sufficient justification to change the current fixed to usage price ratio (NSW Irrigators' Council and Tamworth Regional Council).

In terms of the specific fixed to usage price ratio under 2-part tariffs, High Security Irrigators Murrumbidgee supported a 40:60 fixed/usage split, as per the 2010 State Water Determination. Bega Cheese recommended a 70:30 fixed/usage split, to help drive efficiency within NOW.

6.3.3 IPART's analysis on fixed and usage charges

1-part tariff versus 2-part tariff

We note that there are strong arguments for NOW's proposal of fixed charges only, which include the following:

- NOW has argued that its costs are independent of the level of water extracted, and that its costs are more closely related to entitlement volumes – as it is the entitlement system that it is administering and protecting. It noted that during droughts, and hence low levels of water extraction, its costs actually increase.
- Traded water prices, rather than NOW's charges, signal the scarcity value or opportunity cost of water (where water trading is possible).
- Water extraction forecasts, which are required to set usage charges under a 2-part tariff, are inherently uncertain – particularly for unregulated rivers and groundwater sources.
- A fixed charge would be simple and relatively inexpensive to administer (eg, this would make a potential cap on actual bills easier to administer).

- NOW reports that, over the 2006 Determination period, unregulated river users have shown little interest in switching from a 1-part tariff to a 2-part tariff.
- Fixed charges would provide revenue certainty to NOW. As a government department, NOW has limited ability to put surplus funds away during high revenue periods to save for low revenue periods. In contrast, water users are likely to have more flexibility to save or plan for low water availability/revenue years.
- Fixed charges would avoid any potential perverse incentives or conflict of interest associated with a situation where:
  - NOW is the agency responsible for determining how much water is available for extraction, and
  - its revenue is related to extraction levels.

However, we consider that 2-part tariffs have the advantage of sharing water availability risk between NOW and entitlement holders, as they allow entitlement holders to face lower bills during times of lower water availability or usage. They also give some conservation or scarcity signal to water users, regardless of the ability to trade water, and they provide some recognition that, at certain thresholds, water management costs may be positively related to usage. For these reasons, we have decided to set 2-part tariffs where this is practical (ie, where extraction is metered). However, in light of NOW's arguments, we have decided to set a higher fixed to usage ratio than we did for State Water, as discussed below.

Fixed to usage ratio

In setting prices, the ratio of fixed to usage charges is usually set to match (or approximate) the underlying cost structure of the agency or utility in question. However, NOW has argued that its water management costs are independent of water usage, and we consider that the main benefit of a 2-part tariff in this instance is to share water availability risk between NOW and water users.

In assessing the fixed to usage ratio under NOW's 2-part tariffs, we considered a number of options, including:

- Maintaining the current ratios, which vary between valleys, but average 71% for regulated rivers, 65% for unregulated rivers and 79% for groundwater.
- Applying the State Water ratios: in the recently completed State Water Determination, we set prices to target revenue from fixed entitlement charges and usage charges at the ratio of 40:60 for all valleys except the North Coast and Hunter. In these 2 valleys, we decided to set the ratio at 60:40. These ratios are the same as those applied in the 2006 State Water Determination, and they were strongly supported by stakeholders.
- Accepting NOW's proposal (for regulated rivers) for a 70:30 split between fixed and usage charges.
- Applying another ratio (or ratios) of fixed to usage charges.

We consider that there is a case for NOW to have a higher fixed to usage ratio than State Water, for the following reasons:

- As a government department, NOW can't borrow money and must negotiate with NSW Treasury to carry surplus funds forward. This is in contrast to State Water, which is a State-owned Corporation. Water entitlement holders are also likely to have greater flexibility than NOW, in terms of saving surplus funds for times when costs are greater than revenue. This suggests that NOW should have a higher proportion of its revenue tied to fixed charges than State Water, and that entitlement holders may have more flexibility than NOW to plan for and respond to fluctuations in revenue associated with fluctuations in water availability.
- For this draft determination, we have assumed that unregulated river and groundwater users will extract 100% of their entitlement, given the absence of data provided by NOW (see Chapter 8). The effect of this assumption is to shift some risk to NOW.
- As NOW is the resource manager, there is an argument that a large proportion of NOW's costs should not be tied to water availability – given that it makes the Available Water Determinations.

Taking into account all of the above considerations, we concluded that the most appropriate option was to set 2-part tariffs so that **70%** of expected revenue from the 2-part tariff for each water source and valley is recovered via the fixed charge, and **30%** of expected revenue from the 2-part tariff is recovered from the usage charge.

We note that this ratio is largely a matter of judgement about the allocation of risk and the ability of the parties to manage this risk. We consider that this 70:30 ratio provides NOW with a reasonable degree of revenue certainty, while also providing entitlement holders with some scope to reduce their bills through lower levels of extraction.

The exception to this ratio is North Coast regulated rivers, where we have set prices based on a 92:08 fixed to usage ratio. We have made this decision to protect users from potentially very high water bills. Such bills would occur under a 70:30 split if actual usage was greater than forecast usage, given that usage forecasts for North Coast regulated rivers are very low over the 2011 Determination period.

The option to be charged on a 2-part tariff

Under the 2006 Determination, unregulated river users with a meter could elect to switch from the 1-part tariff (ie, fixed only charge) to the 2-part tariff (fixed and usage charges). The 2-part tariff then provided users with an opportunity to reduce their bill, if they extracted less water. For groundwater users, those located in 'Groundwater Management Areas' were subject to the 2-part tariff, while those outside these areas were on a 1-part tariff.

For this draft determination, we have removed the provision that allows users to elect to move from a 1-part to a 2-part tariff. Rather, the draft determination provides that any user with a meter is subject to the 2-part tariff. We consider that this will help to reduce the complexity of the pricing regime, and help to avoid any confusion. In this context, we note that at least one stakeholder has argued that NOW has not adequately informed unregulated rivers users of their option to switch from a 1-part tariff to a 2-part tariff over the 2006 Determination period.[71]

We also note that with regard to periodic water management charges, users can only benefit from moving from a 1-part to a 2-part tariff. This is because, under this draft determination, a user's bill for a given volume of entitlement and extraction will always be lower under the 2-part tariff than under the 1-part tariff – unless the user is extracting 100% of their entitlement, in which case the bills will be the same under both tariff structures.

6.4 The price path (including a cap on forecast bill increases)

Draft decision:

8 IPART's draft decision is to set prices so that forecast bills do not increase by more than 20% per annum (assuming forecast levels of usage). The only exception is the prices for groundwater users who are currently not in 'Groundwater Management Areas' and so are subject to a fixed charge only. For these users, prices will be set without reference to a cap on forecast bills in the first year of the determination period only.

In determining prices, we also had to decide on the price path, including whether to set prices to recover 100% of the user share of NOW's costs from the first year of the determination period, or whether to gradually transition prices towards higher levels of cost recovery over the determination period via a glide path.

For the 2006 Determination, we set prices to gradually increase levels of cost recovery over the determination period:

- from 87% in 2006/07 to 98% by 2009/10, for regulated rivers
- from 80% in 2006/07 to 88% by 2009/10, for unregulated rivers
- from 50% in 2006/07 to 75% by 2009/10, for groundwater.

By the end of that determination period (2009/10), NOW's overall cost recovery was forecast to be about 88%.

However, the 2006 Determination also included a provision that capped annual bill increases for unregulated river and groundwater users at 20%, assuming a constant level of usage. This means that NOW's actual levels of cost recovery for unregulated

71 Namoi Water submission, June 2010.

rivers and groundwater may have been somewhat lower than the figures listed above.

The factors we considered in making our draft decision for the 2011 Determination, including NOW's proposal, stakeholder views, and our own analysis, are discussed below.

6.4.1 NOW's proposed price path

NOW proposed that prices be set to recover 100% of the user share of its costs, from the first year of the determination period.

NOW also argued against the specific clause in the 2006 Determination that caps actual annual increases on bills for a given level of entitlement/usage, on the basis that the cap is costly and time consuming to administer. For instance, according to NOW, it faces administrative difficulties in separating a user's normal bill from the impacts of water trading (which has to be taken into account as part of the cap).

6.4.2 Stakeholder views on the price path

With the exception of Western Murray Irrigation (which supports the removal of the cap but retention of a glide path), there is general stakeholder support for the retention of a cap on annual bill increases to mitigate customer impacts. However, stakeholders' views differ in relation to the level of the cap and whether the cap should be coupled with a glide path. For instance:

- NSW Irrigators' Council (NSWIC) and Murrumbidgee Irrigation expressed support for the retention of a cap and argued that a glide path is necessary. NSWIC was dismissive of NOW's argument that the cap is complex and time consuming "in an age of computerised billing systems".
- Gwydir Valley Irrigators Association (GVIA) supported a cap, but expressed concern that a glide path would result in artificially high prices towards the end of the determination period.
- While most stakeholders favoured setting the annual cap at 20%, Bega Valley and GVIA suggested the cap on bill increases be lowered to 5%.

Several stakeholders opposed NOW's proposal to move to 100% cost recovery. In that regard, Western Murray, High Security Irrigators Murrumbidgee and Murray Irrigation noted that other states do not levy water management charges and/or are far from 100% cost recovery. These stakeholders argued that a move to 100% cost recovery would put NSW water users at a competitive disadvantage relative to users in other states.

NSWIC suggested that IPART should require NSW to retreat from the current level of cost recovery to one that reflects the weighted average level of water management cost recovery in other states.

6.4.3 IPART's analysis on the price path

Rather than include a provision that places a cap on increases in actual bills (as occurred in the 2006 Determination), we have set prices so that **forecast** annual increases in bills for each valley do not exceed 20% per annum in real terms. We note that where a user's actual usage differs from the forecast usage volumes that we have used to set prices, then the actual annual increase in a user's bill may be greater than 20%. Nevertheless, we consider that this approach:

- Avoids the complexities and administrative costs associated with a cap on actual bills, while also mitigating the impact of price increases on users.
- Allows NOW to transition towards a slightly higher level of cost recovery, in the context of significant increases in costs and prices. NOW's overall level of cost recovery is forecast to increase from 88% in 2009/10 to 94% by 2013/14.

That is, we consider that this approach achieves an appropriate balance between allowing NOW to gradually transition towards higher levels of cost recovery, while also mitigating the impact of prices on water users.

For customers on a 2-part tariff, this approach means that the fixed or usage charge may increase by more than 20%, but that the sum of the usage charge adjusted for forecast usage (as a proportion of total entitlement) and the fixed charge does not increase by more than 20% per annum. For customers on 1-part tariffs, the calculation is simpler: the fixed charge does not increase by more than 20% per annum (or about 73% in total over 2009/10 to 2013/14).

The exception to the above 20% rule is prices for groundwater users who are currently not in 'Groundwater Management Areas'. Under the 2006 Determination, these users currently pay only the fixed component of the 2-part tariff. Under this 2011 Draft Determination, we have set unregulated river and groundwater prices so that:

- the fixed charge under the 2-part tariff is less than the fixed charge under the 1-part tariff, and
- the sum of the fixed and usage charge under the 2-part tariff equals the fixed charge under the 1-part tariff.[72]

Unlike the 2006 Determination, we have not set a different price structure for 'managed' areas relative to other areas, as NOW has stated that all groundwater extraction is now 'managed'. Under the 2006 Determination, only groundwater users extracting in sites outside 'management areas' were on the 1-part tariff.

72 This is a consequence of our usage forecasts for groundwater and unregulated rivers, where we have assumed that users extract 100% of their entitlement.

In transitioning to this new price structure, groundwater users moving from the existing 1-part tariff to the new 1-part tariff may face bill increases greater than 20% from 2010/11 to the first year of the determination period (2011/12). However, after 2011/12, their forecast annual bill increases are capped at 20% per annum.

6.5 The minimum bill

Draft decision:

9 IPART's draft decision is to set the minimum bill at $95 per annum in real terms ($2009/10) over the 2011 Determination period.

IPART's 2006 Determination set a minimum annual bill of $60 for regulated, unregulated and groundwater bulk water services provided by NOW.

This minimum bill was set to recover NOW's ongoing administration costs (eg, maintaining the licensing database and monitoring licence conditions) associated with zero or small entitlement Water Access Licences. Such zero or small entitlement licences are often created to facilitate trading.

IPART's 2006 Final Report noted that:

> Zero and small share WALs [Water Access Licences] are licences with very little or no entitlement volume attached to them. These licences were created specifically to facilitate trading, by allowing water users to access water on a temporary basis without owning permanent access rights (unit shares) to water. Small and zero share WALs are created either by application to DNR, or when existing licence holders sell off their unit shares to other licence holders. DNR expects these licences to grow rapidly.
>
> In its submission in response to the Draft Report, DNR noted that transaction fees recover the administrative costs of processing an application for, and creating, a small or zero share WAL. However, it incurs ongoing administration costs because of its responsibility to maintain the licensing database and monitor licence conditions. The Draft Report prices did not provide a mechanism to recover these costs, and DNR therefore proposed the Tribunal introduce a minimum bill for all water sources.
>
> The Tribunal is satisfied that DNR incurs ongoing administration costs for small and zero share WALs. It therefore considers that a minimum charge should be applied to all water sources, including zero and small share water access licences.[73]

[73] IPART, *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010*, September 2006, p 105.

6.5.1 NOW's proposal on the minimum bill

In its submission, NOW proposed maintaining the current level of the minimum bill at $60 per annum over the determination period. However, at the public hearings, NOW stated that:

- $60 doesn't cover its billing and administration costs, or water management costs, for small entitlement holders
- on a cost recovery basis, NOW would support a $200 minimum bill (as proposed by other stakeholders).

6.5.2 Stakeholder views on the minimum bill

A number of stakeholders argued for an increase in the minimum bill. For instance:

- The NSW Irrigators' Council, Gwydir Valley Irrigations Association and Bega Cheese supported an increase in the minimum charge to $200 per licence. They argued this would encourage the amalgamation of licences where warranted, reduce administration costs to NOW and more fairly distribute NOW's costs. However, they indicated there should be a 12-month lead-in period together with notification to multiple licence holders of the increase charge, to enable amalgamation where warranted.
- Murrumbidgee Irrigation submitted that the minimum charge should be increased in line with the maximum increase in charges for any entitlement holder in this determination.
- Western Murray Irrigation also supported a higher minimum bill to reflect the administration costs of these accounts.

Coastal Valleys Customer Service Committee supported a "reasonable" minimum charge, but argued that this should be levied on individual access points, not individual water access licences.

6.5.3 IPART's analysis on the minimum bill

We decided to increase the minimum bill from $60 to $95 per licence, per annum, for all water sources and valleys, effective from 1 July 2011, which represents an increase of approximately 60%. We consider this increase is warranted to ensure that smaller users face more cost-reflective water bills.

In setting the new minimum bill, we were mindful of the cap (20% per annum increase in forecast bills) we applied when setting entitlement and usage charges. However, rather than gradually increasing the minimum bill at 20% per annum over the 3-year determination period, we decided to immediately increase this charge by approximately 60%.[74] We consider this warranted because, unlike other charges, the minimum bill remained constant (in real terms) through 2006/07 to 2009/10. In addition, NOW has indicated that it does not currently cover its water management and administration costs associated with small entitlement holders. We also consider that our proposed $35 increase (rather than a gradual annual increase of 20% or approximately $15 per annum) provides a stronger incentive for licence holders to consolidate their licences, where possible.

We note that there was some support at the public hearings and in submissions for a higher minimum bill (eg, $200 per annum). However, we are conscious that users with small entitlements, and hence who are likely to be subject to the minimum bill, were under-represented at the public hearings and in formal submissions.

We also note that NOW has indicated that it has not been levying the minimum bill on licences with a zero value entitlement. We estimate this relates to 5,515 licences, and therefore equates to revenue of approximately $330,900 per annum under the current minimum bill of $60.

The prices in this Draft Report and Determination have been modelled assuming all licences with an entitlement, including those with zero ML or unit share entitlements, are subject to the minimum bill of $95. This is consistent with cost reflective pricing, as there is likely to be administration, compliance, and resource monitoring costs associated with zero share licences. In addition, it is inequitable for NOW to recover these costs from other users.

6.6 Tariffs for special category licences

Draft decision:

10 IPART's draft decisions are to:

- subject Supplementary Water (regulated river) and Floodplain Harvesting (regulated and unregulated river) licence holders to the usage charge under the 2-part tariff
- subject High Flow (unregulated river) licence holders to the minimum bill
- ensure that Supplementary Groundwater entitlement is charged based on entitlement available under the Available Water Determination and, if metered, usage.

[74] A 20% per annum increase over 3 years equals about a 73% increase in total over the period, which equates to a minimum bill of approximately $105. However, given that we are proposing that this figure be applied from the first year of the determination period, we have opted for the lower figure of $95.

The 2006 Determination included charges for special category licences, including High Flow and Supplementary Water Access Licences. NOW's submission to this review also indicated that it plans to issue licences and entitlements for floodplain harvesting.

6.6.1 Stakeholder comments on tariffs for special category licences

The NSW Irrigators' Council argued that:

- as per the current determination, supplementary water entitlement should be subject to a usage charge only
- once issued, floodplain harvesting licences ought to be charged at the same level and in the same manner as any other entitlement.

In addition, the Gwydir Valley Irrigators Association, Namoi Water, and Lachlan Valley Water Users pointed out that the 2006 Determination did not recognise the intention of supplementary groundwater access licences. These licences were issued by NOW in relation to groundwater in the Gwydir, Macquarie, Lachlan, Murrumbidgee, Murray and Namoi Valleys, as an administrative vehicle for structural adjustment. They facilitate a transition from the licensee's historical levels of extraction to sustainable levels by 2017. NOW does this by issuing a licence for a specific entitlement value (the historic level) and then adjusting theses values downwards annually via the gazettal of Available Water Determinations (AWDs). However, stakeholders have noted that unless the tariff is set with reference to the entitlement as adjusted by the AWD, users will be overcharged (relative to the intention of the structural adjustment). NOW has confirmed the logic of stakeholders' proposal.

6.6.2 IPART's analysis on tariffs for special category licences

We have set the following prices for special category licences:

- Supplementary Water (regulated rivers) – holders of supplementary water licences on regulated rivers will pay the usage price under the 2-part tariff. This is consistent with the 2006 Determination and our recent (2010) determination of State Water's prices.
- High Flow licences (unregulated rivers) – holders of high flow licences in unregulated rivers will pay the minimum bill. NOW has advised that of the existing 22 High Flow licences in unregulated rivers, only 1 has been given a volume entitlement and none are currently metered.[75] Therefore, for reasons of practicality, we consider that these licences should be subject to the minimum bill.

75 Correspondence from NOW to IPART, 29 April 2010 and 27 August 2010.

- Floodplain Harvesting (regulated and unregulated rivers) – holders of floodplain harvesting licences will pay the usage charge under the relevant 2-part tariff. We note that NOW's draft policy on Floodplain Harvesting, released in April 2010, suggests that all floodplain harvesting extraction will be monitored via meters or other means.
- Supplementary groundwater licences – the entitlement charge will be applied to the entitlement under the Available Water Determination. We understand that this is consistent with the intention of the licences and the structural adjustment.

6.7 Rebates for large entitlement holders

Draft decision:

11 IPART's draft decision is to not reintroduce rebates or discounts for large customers.

Prior to the 2006 Determination, 'wholesale discounts' or rebates had previously been provided to large irrigation corporations. For the 2006 Determination, we decided to phase out the wholesale discount by 2009/10. This was based on NOW's (then DNR) claims that irrigation corporations do not mitigate or reduce its water management costs, as well as the findings of CIE, an independent consultant engaged by IPART. CIE examined the drivers of NOW's water resource management (WRM) costs, including the number of licences and the presence of irrigation corporations, before concluding that:

> On balance, the proposition of this review is that there is insufficient grounds for differential pricing with respect to DNR's WRM costs.[76]

6.7.1 Stakeholder submissions on rebates for large entitlement holders

Murray Irrigation and Western Murray Irrigation argued that we should consider re-introducing rebates to large customers on the grounds that:

- These irrigation corporations reduce costs to NOW – through having to licence, monitor and deal with one large licence holder rather than many smaller licence holders.
- A rebate may help to reduce the incentive for customers of these irrigation corporations to transform (and such transformation would arguably increase NOW's administration costs in the long term).
- These irrigation corporations participate in and contribute to the water planning and management process. For example, Western Murray Irrigation has contributed data and information to the MDBA, the Bureau of Meteorology, and the National Water Commission.

76 CIE, *Review of Price Discounts for Wholesalers*, March 2006, p 14.

6.7.2 IPART's analysis on rebates for large entitlement holders

We have decided not to reintroduce a rebate for large entitlement holders. We consider that there is no compelling evidence to reverse our 2006 decision, which was based on investigations undertaken by an independent consultant (CIE).

We also note that, as it allocates cost or activity codes on a cost driver basis, the new cost allocation methodology should account for any impact that large entitlement holders have on NOW's costs. For instance, the cost allocation methodology identifies those activities whose costs are related to licence numbers (eg, 'licence administration', 'licence conversion and entitlement specification', 'financial administration' and 'compliance') and allocates these costs across water sources and valleys accordingly. In this way, the cost allocation methodology allocates a lower proportion of the costs of such activities to valleys with a lower number of licences – and hence accounts for any impact that irrigation corporations or other large entitlement holders may have on NOW's costs.

Further, NOW's presentation at the public hearings indicated that it continues to pay some irrigation corporations contributions to augment or replace ageing assets or infrastructure.

6.8 Charges for basic landholder (stock and domestic) rights

Draft decision:

12 IPART's draft decision is to not set charges for basic rights holders, but instead consider this issue at the next determination of NOW's prices.

Under water legislation in NSW, rural landholders who own or occupy land on a riverbank, lakefront or overlying aquifer can take water (without a licence) for domestic purposes and to water stock on the property. As they are unlicensed, these 'basic rights' holders are currently not subject to NOW's water management charges.

6.8.1 Stakeholder submissions on charges for basic rights holders

Some stakeholders have argued that water management charges should be extended to holders of basic water rights. For example, Gwydir Valley Irrigators Association suggested that IPART should look at setting a charge for all rural properties, as a contribution towards the management of the state's water resources, to account for riparian rights, stock and domestic and other basic rights.

At the Sydney public hearing, State Water also argued for charges to be levied on stock and domestic and other basic water rights holders, on the grounds that they extract water – and hence contribute to water management costs – without being subject to any metering or water management charges.

At the public hearings, NOW noted that it is currently developing a policy or guideline on basic rights holders, which will include reasonable use limits, but will not include a vehicle for enforcing charges on these users.

6.8.2 IPART's analysis on charges for basic rights holders

We recognise that, under the impactor pays principle, there may be an argument that basic rights holders should contribute to NOW's water management costs. We also recognise that the impact of basic rights holders on the water resource and water management is an emerging issue in some areas, including peri-urban areas.

However, for this draft determination, we have decided not to set water management charges for basic rights holders, primarily for the following reasons:

- as they are currently not subject to water management charges, basic rights holders have not participated in this review – hence, they have not had a chance to present their views
- without full consultation on this pricing option, there may be potential for perverse or unintended outcomes (eg, a flat water management fee could prompt some basic rights holders to maximise their basic right and use more water than currently)
- NOW is currently developing a policy on basic rights, which will have implications for how these rights are managed, and potentially whether basic rights holders should be subject to a water management charge.

We consider that this issue should be revisited at the next determination of NOW's prices (2014), by which time NOW's policy or guideline should be clearly established and basic rights holders can be engaged in the review process. In the meantime, we welcome stakeholder comments and submissions on this issue.

7 Allocation of the user share across water sources and valleys

The draft decision to set water management prices by valley for regulated and unregulated rivers and to transition groundwater prices towards a coastal/inland split then means that IPART needs to consider how best to allocate the user share of NOW's total efficient costs (discussed in Chapter 4) across water sources and valleys.

NOW does not record costs on a valley-by-valley basis. It has argued that many of its activities are undertaken on a state or regional basis, which makes it difficult to directly record costs at the valley level. For the 2005 and 2006 Determinations, we allocated costs across water sources and valleys on the basis of a 2003 survey of senior NOW staff about where costs were being incurred.

In this review, NOW identified that continuing with this approach might not be a reliable method of allocating costs across valleys for pricing purposes. NOW also proposed a new methodology for allocating costs for the 2011 Determination period.

In reaching our draft decision on the appropriate allocation of the aggregate user share of the notional revenue requirement, we considered NOW's proposed methodology, PwC's analysis of this methodology and stakeholders' comments, and undertook our own analysis. The sections below summarise our draft decision, our considerations, and analysis in more detail.

7.1.1 Summary of the draft decision on the allocation of user share costs across water sources and valleys

Draft decision

13 IPART's draft decision on the appropriate allocation of user share costs across water sources and valleys is as shown in Table 7.1 below.

Table 7.1 Draft decision on the allocation of the user share of NOW's monopoly service costs across water sources and valleys

	Scenario 1		Scenario 2		MDBA		Total costs allocated	
	% of total	Total ($'000)	% of total	Total ($'000)	% of total	Total ($'000)	% of total	Total ($'000)
Regulated								
Border	1.5%	1,701	1.3%	55	3.0%	152	1.9%	2,374
Gwydir	2.1%	2,367	2.2%	90	5.7%	290	2.3%	2,761
Namoi	2.3%	2,555	1.7%	68	3.1%	158	2.3%	2,784
Peel	0.6%	618	0.4%	17	0.4%	21	0.5%	657
Lachlan	4.7%	5,181	4.4%	178	6.2%	317	4.7%	5,704
Macquarie	4.2%	4,631	4.1%	167	6.5%	328	4.2%	5,148
Far West	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Murray	10.6%	11,772	10.5%	426	26.5%	1,341	11.1%	13,558
Murrumbidgee	9.5%	10,564	10.6%	432	30.2%	1,533	10.3%	12,595
North Coast	0.2%	198	0.0%	0	0.0%	0	0.2%	202
Hunter	3.5%	3,889	0.0%	0	0.0%	0	3.2%	3,895
South Coast	0.3%	344	0.0%	0	0.0%	0	0.3%	346
TOTAL (REG.)	39.3%	43,820	35.2%	1,432	81.6%	4,139	41.0%	50,024
Unregulated								
Border	0.7%	792	1.6%	67	0.3%	17	0.7%	889
Gwydir	0.8%	918	1.9%	78	0.7%	37	0.9%	1,045
Namoi	1.3%	1,467	4.3%	173	1.6%	83	1.4%	1,754
Peel	0.3%	321	0.6%	26	0.2%	11	0.3%	362
Lachlan	0.8%	837	1.1%	46	0.5%	24	0.7%	909
Macquarie	1.8%	2,052	3.9%	160	1.0%	50	1.9%	2,286
Far West	2.6%	2,910	5.2%	210	2.2%	112	2.9%	3,576
Murray	1.1%	1,210	3.2%	131	0.6%	31	1.1%	1,401
Murrumbidgee	2.4%	2,701	7.4%	301	0.9%	45	2.6%	3,120
North Coast	6.2%	6,945	0.0%	0	0.0%	0	5.8%	7,097
Hunter	4.7%	5,248	0.0%	0	0.0%	0	4.3%	5,299
South Coast	9.8%	10,900	0.0%	0	0.0%	0	9.0%	11,030
TOTAL (UNREG.)	32.6%	36,301	29.3%	1,193	8.1%	410	31.8%	38,770
Groundwater								
GW Inland	22.3%	24,854	35.5%	1,444	10.3%	522	22.0%	26,849
GW Coastal	5.8%	6,415	0.0%	0	0.0%	0	5.3%	6,415
TOTAL (GW)	28.1%	31,269	35.5%	1,444	10.3%	522	27.3%	33,264
Total	100.0%	111,390	100%	4,069	100%	5,070	100.0%	122,058

a Totals may not add due to rounding.

Note: 'Scenario 1', 'Scenario 2' and 'MDBA' costs do not sum to 'Total costs allocated', as 'Total costs allocated' also includes allowances for return on assets, return of assets and BRC costs. Separate columns are not listed for these costs for the purposes of simplicity and ease of presentation.

Source: Extrapolated from the NOW (December) 2009 information returns.

This draft decision reflects our findings that:

- NOW's proposed methodology for allocating the user share of its total efficient costs under Scenario 1 is appropriate, subject to the amendments outlined in Section 7.5.
- NOW's proposed methodology for allocating the user share of its total efficient costs under Scenario 2 requires amendment, so that these costs are allocated across inland valleys only.

7.2 NOW's proposed methodology

NOW's proposed methodology for allocating the user share of its costs across water sources and valleys involves identifying the most appropriate cost driver for each cost code, and then using this driver to allocate the costs of that code across water sources and valleys. It involves 3 main steps:

1. Expenditure is recorded under the different cost codes based upon the nature of the activity (eg, 'surface water quantity monitoring').
2. Each cost code is assigned a 'cost driver' that represents the key determinant of this expenditure across valleys and water types. For example, the number of water gauging stations is the cost driver for the 'surface water quantity monitoring' cost code. Each cost driver has 'cost allocation shares' for each valley and water type (recorded as percentages).
3. The user share of costs for each cost code is then apportioned to water sources and valleys by using the relevant cost driver's cost allocation shares.

Under this methodology, if a valley has 10% of NOW's water gauging stations, then it will be assigned 10% of the user share of costs of 'surface water monitoring'.

NOW's cost drivers for each of its cost codes, along with the rationale for these drivers, are listed in Appendix 3 of its December 2009 submission. A worked example that illustrates the application of the methodology is provided in Appendix D of this report. Further information is also included in Chapter 3 of the PwC report.[77]

[77] PwC and Halcrow, *Review of NSW Office of Water's water management expenditure*, 30 June 2010.

7.3 PwC's analysis of NOW's proposed methodology

As part of its review of NOW's proposed water management costs, PwC assessed NOW's proposed methodology for allocating the user share of its costs across water sources and valleys. PwC found that the methodology is a "step in the right direction" and that "for the most part, NOW has applied cost drivers that appear reasonable and appropriate for allocating costs of the specific activities nominated."[78]

However, PwC also questioned the use of 'entitlement volume' or 'extraction related entitlement' as the means of allocating the costs of some activities across valleys. This is because these appear to be default allocators in the absence of a clear and readily available cost driver. Of those cost codes that are allocated by entitlement or extraction-related entitlement volumes, PwC identified activities for which there is "no clear relationship between entitlement volume and cost", "only a weak relationship between entitlement volume and cost", or "a clear relationship between entitlement volume and cost".

PwC's report includes an assessment of NOW's proposed cost drivers (or allocators) for each of its cost codes.[79] This report is available on IPART's website.

7.4 Stakeholder comments on NOW's proposed methodology

A number of stakeholder submissions raised concerns that under NOW's proposed methodology for allocating the user share of costs, some water sources or valleys are cross-subsidising other water sources or valleys. Stakeholders also expressed a general concern that the methodology was not sufficiently explained or justified.

Stakeholders in coastal valleys (such as Coastal Valleys Customer Service Committee and Midcoast Water) questioned the allocation of Scenario 2 costs to their valleys, as these costs are, by definition, Murray-Darling Basin related.

Murrumbidgee Irrigation noted that NOW's cost allocation system relies heavily on entitlement volumes, and that this unfairly penalises valleys with large entitlement volumes and few customers (such as Murrumbidgee).

7.5 IPART's analysis and findings

We consider that NOW's proposed cost allocation method is a substantial improvement on the method used in the 2006 Determination. It is documented, repeatable, and transparent. We note that PwC questioned the use of entitlement volumes as an allocator for a number of cost codes, including 'business development', 'water industry regulation', 'cross-border and national commitments', 'environmental water management', 'environmental water planning', 'operational

78 Ibid, p 50 and 55.
79 Ibid, pp 45-55.

planning' and 'compliance'. On balance, for these cost codes, we consider that entitlement volume is likely to be the best available indicator/allocator of NOW's costs.

Therefore, in reaching our draft decision on the allocation of the user share across water sources and valleys, we have largely used NOW's proposed method. However, we identified 3 problems with the proposed methodology, which we addressed in the following ways:

1. We identified some inconsistencies between how costs were allocated in NOW's Excel Returns to IPART and its explanation in its written submission. This is particularly the case for MDBA costs. In these instances, we found that it was appropriate to allocate costs in line with the methodology outlined in NOW's written submission.

2. NOW used 'Extraction related entitlement' to allocate some costs through a 2-step process: costs were first allocated to water types (regulated rivers, unregulated rivers and groundwater) on the basis of total entitlement, and then to valleys on the basis of 'extraction related entitlement'.[80] We found that this 2-step process represents an error in logic, which has the effect of shifting costs from unregulated river and groundwater licence holders to regulated river customers. Therefore, we corrected for this error by allocating relevant costs on the basis of extraction related entitlement only (rather than applying the 2-step process).

3. Under NOW's methodology, the user share of additional costs under Scenario 2 was allocated to users in coastal valleys (North Coast, Hunter, and South Coast) for all water sources. However, as stakeholders argued, this is not appropriate because these additional costs are clearly attributed to the Murray-Darling Basin. We consider that any allocation of Scenario 2 costs to users outside this Basin is inconsistent with the 'impactor pays' principle, as these costs are only attributable to the Basin. Therefore, we allocated all of the additional Scenario 2 costs that we allowed (see Chapter 4) to regulated, unregulated, and groundwater valleys within the Murray Darling Basin only.

We note that this new cost allocation methodology produces a step change in the percentage of costs allocated to different water sources and valleys, and that it is a major driver of price variations between valleys. While this allocation methodology may be refined over time, we expect that, unless there is a strong justification otherwise, this method will be used as the basis of NOW's annual reporting, NOW's submission to the next price review and future prices. That is, relative to this new cost allocation methodology, we do not expect NOW to significantly change its cost allocation methodology again for future price reviews.

80 'Extraction related entitlement' is entitlement less dedicated environmental flows.

8 Entitlement volumes and usage forecasts

As Chapter 6 discussed, we have decided to set:

- a 2-part tariff – comprising a fixed entitlement charge (per entitlement, per year) and a variable usage charge (per ML of water extracted) – where a user has a meter in place
- a 1-part tariff – comprising a fixed charge only – where a meter is not in place.

To set these fixed and usage charges for each water source and valley at the levels required to recover the costs allocated to that water source and valley, we need to make assumptions about the water entitlement volumes and forecast water extraction (or 'usage') in each valley. These assumptions have a major impact on prices. For a given level of valley cost, the larger the entitlement volume or usage volume for that valley, the lower the valley entitlement or usage charge. Conversely, the lower the entitlement or usage volume, the higher the entitlement or usage charge.

However, we also note that the entitlement volume is a significant driver/allocator of costs between valleys under the methodology we used to allocate the user share costs across valleys (see Chapter 7). This means that, the higher the entitlement volume for a valley, the higher the level of costs that are allocated to it (all other things being equal).

The section below summarises our draft decisions on:

- the appropriate entitlement volume to use in setting entitlement charges for each water source and valley[81]
- the appropriate entitlement volume to use in setting entitlement charges for the major water utilities (Sydney Catchment Authority and Hunter Water Corporation)

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81 When a water sharing plan commences, licences issued under the *Water Act 1912* (WA) within the water sharing plan area are immediately replaced with water access licences issued under the *Water Management Act 2000* (WMA). As water sharing plans have not yet commenced in all areas, some WA licences remain. Under the WA, licence holders hold *ML* of water entitlement; whereas under the WMA, they hold *unit shares* of available water. For the purposes of modelling prices, we have assumed that 1 unit share equals 1 ML of entitlement (as has NOW in the entitlement volume data that it has provided us). For simplicity, when we refer to 'ML of entitlement' or 'entitlement' in this report we are referring to ML of entitlement (under the WA) or unit shares (under the WMA).

- the appropriate usage forecast to use in setting usage charges for each water source and the major water utilities.

The subsequent sections discuss our considerations in making each of these decisions in more detail. Figure 8.1 shows how the decisions on entitlement volumes and usage volumes are used within our broad approach for attributing NOW's monopoly water management costs to licence holders in a particular valley, via prices.

8.1 Summary of draft decisions on entitlement volumes and usage forecasts

Draft decisions

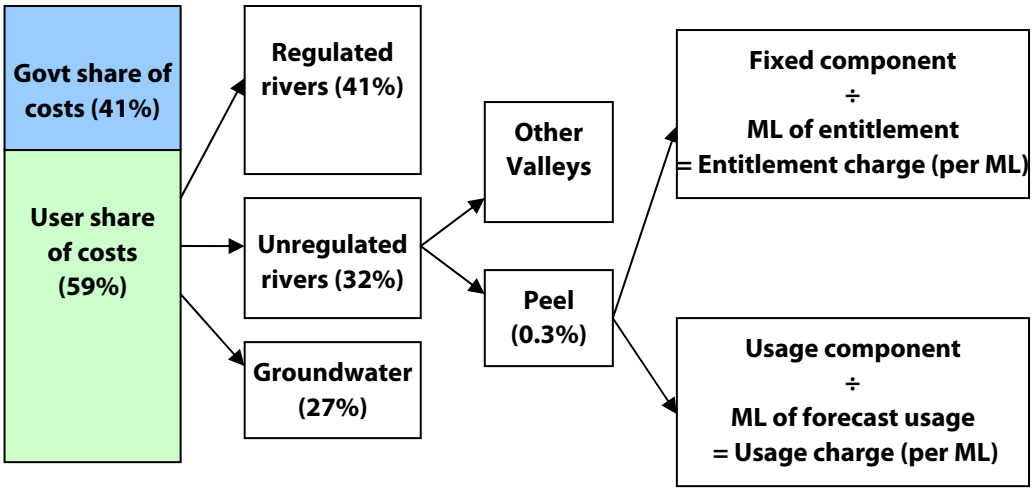
14 For the purpose of setting fixed charges (per entitlement), IPART's draft decisions are to:

- adopt the entitlement volumes provided by NOW for all water sources and valleys
- adopt the entitlement volumes provided by NOW for Hunter Water Corporation and the Sydney Catchment Authority.

15 For the purpose of setting usage charges (per ML of water extracted), IPART's draft decisions are to:

- apply the same usage forecasts for regulated rivers as we used in making the 2010 State Water Determination
- apply usage forecasts for unregulated rivers of 100% of entitlement, except for Hunter Water Corporation and the Sydney Catchment Authority where we have based their usage forecasts on historical extraction levels
- apply usage forecasts for groundwater of 100% of entitlement, except for Hunter Water Corporation and the SCA where we have based usage forecasts on historical extraction levels.

Figure 8.1 Illustrative example of our broad approach for attributing NOW's costs to licence holders in a particular valley (eg, unregulated river users in the Peel Valley)



Notes:

1. 'ML of forecast usage' represents usage by customers on a two-part tariff, as usage charges are not recovered from customers who are on a fixed (per ML of entitlement) charge only.
2. The relative sizes of cost blocks in the diagram are not indicative of actual costs.

8.2 Entitlement volumes for each water source and valley

To make our draft decision on the appropriate entitlement volumes to use in setting entitlement charges for each water source and valley, we considered NOW's proposed entitlement volumes and compared them with the volumes we used in making the 2006 Determination.

8.2.1 NOW's proposed entitlement volumes for each water source and valley compared with those used for the 2006 Determination

NOW's proposed entitlement volumes were extracted from its licence billing database, as at the time its submission was prepared. For the regulated rivers water source, there are different entitlement volumes for users with high security licences and general security licences.

Regulated rivers, - high security

Table 8.1 shows NOW's proposed entitlement volumes for regulated rivers, high security, and compares them with those used for the 2006 Determination. It indicates that, for many valleys, these volumes have increased since 2006, particularly for the Murrumbidgee.

Table 8.1 NOW's proposed entitlement volumes for regulated rivers – high security, compared with those used for the 2006 Determination

Valley	2006 Determination (ML/annum)	NOW proposed (ML/annum)	Difference
Border	3,107	3,125	1%
Gwydir	21,439	21,458	0%
Namoi	8,519	8,527	0%
Peel	17,378	17,381	0%
Lachlan	57,144	60,778	6%
Macquarie	42,095	42,594	1%
Murray	252,083	257,438	2%
Murrumbidgee	358,552	436,928	22%
North Coast	127	137	8%
Hunter	70,694	70,738	0%
South Coast	903	967	7%
Total	832,041	920,071	11%

Source: Review of Bulk Water Prices for State Water Corporation and WAMC 2006, and NOW's December 2009 submission.

Regulated rivers, general security

Table 8.2 shows NOW's proposed entitlement volumes for regulated rivers, general security, and compares these with the entitlement volumes used for the 2006 Determination. It shows that for most valleys, these volumes are the same or similar to those used for the 2006 Determination. The exceptions are the Murrumbidgee and North Coast valleys.

Table 8.2 NOW's proposed entitlement volumes for regulated rivers – general security, compared with those used for the 2006 Determination

Valley	2006 Determination (ML/annum)	NOW proposed (ML/annum)	Difference
Border	263,328	263,085	0%
Gwydir	509,917	509,665	0%
Namoi	255,936	255,780	0%
Peel	30,383	30,911	2%
Lachlan	633,951	632,946	0%
Macquarie	631,526	631,716	0%
Murray	2,029,307	2,076,223	2%
Murrumbidgee	2,414,307	2,264,065	-6%
North Coast	9,088	10,193	12%
Hunter	137,955	138,109	0%
South Coast	14,014	14,197	1%
Total	6,929,712	6,826,889	-1%

Note Totals may not add due to rounding.

Source: Review of Bulk Water Prices for State Water Corporation and WAMC 2006, and NOW's December 2009 submission.

Unregulated rivers

Table 8.3 shows NOW's proposed entitlement volumes for unregulated rivers, and compares these with the entitlement volumes used for the 2006 Determination. For almost all valleys, these volumes are significantly higher or lower than those used for the 2006 Determination. NOW has provided a number of reasons for these differences, including that:

- the 2006 Determination included non-billable entitlement volumes
- the 2006 Determination used 2001 entitlement data, which included forecasts of volumetric conversions that may have underestimated actual entitlement volumes[82]
- for previous determinations, valley boundaries for unregulated river entitlements were not always clearly defined, as the allocation of licenses to specific areas occurs in the process of developing water sharing plans.[83]

82 2001 was the start of conversion of unregulated licenses from area-based entitlement to volumetric entitlement. The figures used in 2001 would have included estimates of volumetric conversions. Many of these conversions were later revised after appeals from licensees. Such revisions would be expected to maintain or increase entitlement volumes.

83 Correspondence from NOW to IPART, 10 March 2010.

Table 8.3 NOW's proposed entitlement volumes for unregulated rivers, compared with those used for the 2006 Determination

Valley	2006 Determination (ML/annum)	NOW proposed (ML/annum)	Difference
Border	34,894	28,904	-17%
Gwydir	34,702	46,147	33%
Namoi	140,335	144,523	3%
Peel	15,994	19,768	24%
Lachlan	59,159	43,215	-27%
Macquarie	179,499	88,200	-51%
Far West	219,172	199,571[a]	-9%
Murray	57,871	52,407	-9%
Murrumbidgee	91,497	64,738	-29%
North Coast	246,806	264,396	7%
Hunter	205,303	220,449	7%
South Coast	312,777	275,790	-12%
Total	1,598,009	1,448,108	-9%

a This number has been updated after NOW acknowledged an error in its original (December 2009) submission. The original figure was 212,382 ML.

Note: The data do not include the entitlements held by major water utilities (ie, Hunter Water Corporation and Sydney Catchment Authority).

Sources: IPART's report on its review *of Bulk Water Prices for State Water Corporation and the Water Administration Ministerial Corporation*, 2006; NOW's December 2009 submission; and correspondence from NOW to IPART, 3 March 2010.

Groundwater

It is difficult to compare NOW's proposed groundwater entitlements with those used in the 2006 Determination, due to changes in the valley boundaries and definitions. In particular, we note that:

- Barwon (as identified in the 2006 Determination) has been divided into 4 separate valleys (Border, Gwydir, Namoi, and Peel) in the data supplied by NOW
- Central West (as identified in the 2006 Determination) has been split into 2 separate valleys (Lachlan and Macquarie) in the data supplied by NOW.

In addition, NOW's proposal to combine valleys into coastal and inland regions for the purposes of groundwater pricing (discussed in Chapter 6) increases the difficulty.

Table 8.4 presents a limited comparison of the entitlement volumes for groundwater proposed by NOW for this determination and those used for the 2006 Determination.

Table 8.4 NOW's proposed entitlement volumes for ground water, compared with those used for the 2006 Determination

Valley	2006 Determination (ML/annum)	NOW proposed (ML/annum)	Difference
Barwon	648,832	359,036	-45%
Central West	716,707	510,716	-29%
Far West	1,831[a]	71,511	3,806%
Murray/Lower Darling	388,902	239,239	-38%
Murrumbidgee	611,158	393,254	-36%
INLAND TOTAL	**2,367,430**	**1,573,756**	**-34%**
North Coast	48,143	52,418	9%
Hunter	141,100	223,465	58%
South Coast	33,122	119,793	262%
COASTAL TOTAL	**222,365**	**395,676**	**78%**
Total	**2,589,795**	**1,969,432**	**-24%**

a Our analysis suggests that this number appears to be an error.

Note: In the 2006 Determination, Border, Gwydir, Namoi and Peel were classified as the 'Barwon', and Lachlan and Macquarie were classified as the 'Central West'.

Source: Review of Bulk Water Prices for State Water Corporation and WAMC 2006, and NOW December 2009 submission.

8.2.2 IPART's analysis of entitlement volumes for each water source and valley

For the 2006 water management price review, NOW (then DNR) did not provide entitlement volumes for unregulated rivers or groundwater to IPART. Therefore, we decided to use entitlement data derived from the 2001 Determination to model prices. These data did not reflect the large-scale change to bulk water licences that have occurred over the last decade. Therefore, continued use of these figures would undermine attempts to achieve cost-reflective pricing.

We are satisfied that NOW's entitlement data are the best available. Therefore, our draft decision is to adopt NOW's proposed entitlement volumes.

8.3 Entitlement volumes for major water utilities

The entitlement volumes for Hunter Water Corporation (HWC) and the Sydney Catchment Authority (SCA) are large and hence have a substantial influence on prices. The combined entitlements of these 2 utilities represent around half of total unregulated river entitlements. As a result, entitlements volumes for HWC and SCA:

- have a significant impact on unregulated river prices in the Hunter valley and South Coast valley, respectively, and

- play a major role in allocating costs to water types and valleys (as entitlement is a key cost driver).

8.3.1 IPART's decision on entitlement volumes for HWC and SCA in the 2006 Determination

For the 2006 Determination, we decided to charge HWC and SCA on the basis of extraction – as opposed to entitlement. At that time, we noted that:

- neither utility had an entitlement volume
- both utilities were different to most irrigators, who use close to 100% of annual allocations
- their entitlements would represent an upper bound that they would only need to access in some years.

However, we note that HWC now has an entitlement under a gazetted water sharing plan, and SCA has an entitlement under a draft water sharing plan.[84] We also note that some stakeholders have provided information to this review that suggests many other users, also do not use 100% of their entitlement.[85]

8.3.2 NOW's proposed entitlement volumes compared with those proposed by HWC and SCA

NOW proposed charging HWC and SCA based on their full entitlement volumes; the same as other users. However, both these utilities have made submissions requesting that they be charged on a different basis to other users. They argued that they are unique because they do not use their entire entitlement. Therefore, their charges should be based on their long-term average extraction volumes.[86]

Table 8.5 compares HWC and SCA's entitlement volumes with the long-term average extraction volumes they proposed for setting the entitlement charges levied on them.

84 We expect that the Greater Metropolitan Water Sharing Plan will be gazetted by the start of the 2011 Determination (ie, 1 July 2011), thus providing SCA with an entitlement under a gazetted water sharing plan.

85 The 2006 Determination stated that, once its entitlement volume was established, SCA should be charged on the basis of entitlement. However, this was based on the assumption that SCA's expected entitlement volume would be close to its annual usage. As SCA's entitlement was eventually set at double annual usage, HWC and SCA share the same situation.

86 Users in the Peel valley have made similar arguments, as conditions included in water sharing plans limit the volumes of water that can be extracted in the Peel valley.

Table 8.5 HWC and SCA's average historical extraction volumes compared to their entitlement volumes (ML/annum)

Valley	Average historical extraction	Total entitlement	Average extraction as a proportion of entitlement
HWC	57,500[a]	376,700	15%
SCA	545,770[b]	980,000	56%
Total	603,270	1,356,700	44%

a As provided by HWC in its June 2010 submission.

b As provided by SCA in its June 2010 submission.

Source: NOW 24 December 2009 Excel Information Returns to IPART, HWC submission to this determination, and SCA submission to this determination.

Neither HWC nor SCA disputed the accuracy of the entitlement information provided by NOW. They instead made an argument about its application to the pricing process.

Hunter Water's submission

In its submission, HWC stated that it has multiple extraction points, to ensure water availability throughout the year. As a result, its average level of extraction is substantially less than its entitlement. On this basis, it argued that NOW's proposal for 100% fixed charges in relation to entitlement is not appropriate.

HWC also noted that the Long Term Average Annual Extraction Limit (LTAAEL) imposed by the Hunter Water Sharing Plan restricts its long-term extractions to 21% of its total entitlement volume. It put the view that this places it in a unique situation. It proposed continuation of a usage tariff or, failing that, charges based on its average level of extraction,[87] which is approximately 15% of its total entitlement.

In addition, HWC raised concerns about the double-counting of its water entitlements. It noted that it holds an entitlement to extract water from the Williams River to store in the off-river Grahamstown Dam, and also holds an entitlement to extract water from the dam to supply customers. It stated that this amounts to paying twice for the same water, and is hence inequitable.

Sydney Catchment Authority's submission

SCA stated that its entitlement volumes will be more than double its forecast extractions over the 2011 Determination period. It proposed that its long-term average extraction (56% of its total entitlement) be used as the basis for its water management charges. At the public hearing, SCA also raised similar concerns to

87 It is important to distinguish between the LTAAEL and the long-term average level of extraction. The first is a limit imposed under a water sharing plan, whereas the second is the average level of actual extraction.

HWC about the double-counting of water entitlements for off-river dam storage and subsequent supply to customers.

8.3.3 IPART's analysis on the appropriate entitlement volumes for HWC and SCA

In considering the appropriate entitlement volumes for use in setting HWC and SCA's entitlement charges, we considered:

- whether the division of NOW's efficient cost between users ought to be based on entitlement, long-term average extraction, or usage only, and
- whether the major utilities are sufficiently 'special' to justify different approaches.

In our view, the following arguments suggest that HWC and SCA's total entitlement volumes should be used in allocating costs and calculating prices:

- During the review process, a number of stakeholders on unregulated rivers have noted that the long-term average extraction limits of the water sharing plans mean that less than 20% of their entitlement can, in practice, be extracted. In addition, IPART notes that the Wyong Shire Council and Tamworth Council also do not use 100% of their entitlement. This suggests HWC and SCA are not in a unique position.
- This approach appears to be cost-reflective, as NOW has indicated that entitlement is an accurate indication of the distribution of its water management costs, regardless of whether full entitlement is actually used. Further, if IPART accepted HWC's and SCA's proposal then, for a given level of cost recovery for NOW, the prices for other users would increase.
- Similarly, regardless of their usage, HWC and SCA benefit from their entitlement volumes, as these volumes provide them with an element of operational flexibility and a form of insurance.
- NOW's water management charges represent a small portion (between 1% and 2%) of the total revenue requirement for each of these utilities. As a result, any impact on these utilities themselves or retail water prices in the Hunter and Sydney areas will be minor. (We are aware that SCA and HWC will have to carry these additional costs for 1 and 2 years, respectively, before they are able to make a case for the recovery of these costs through their new water prices.)

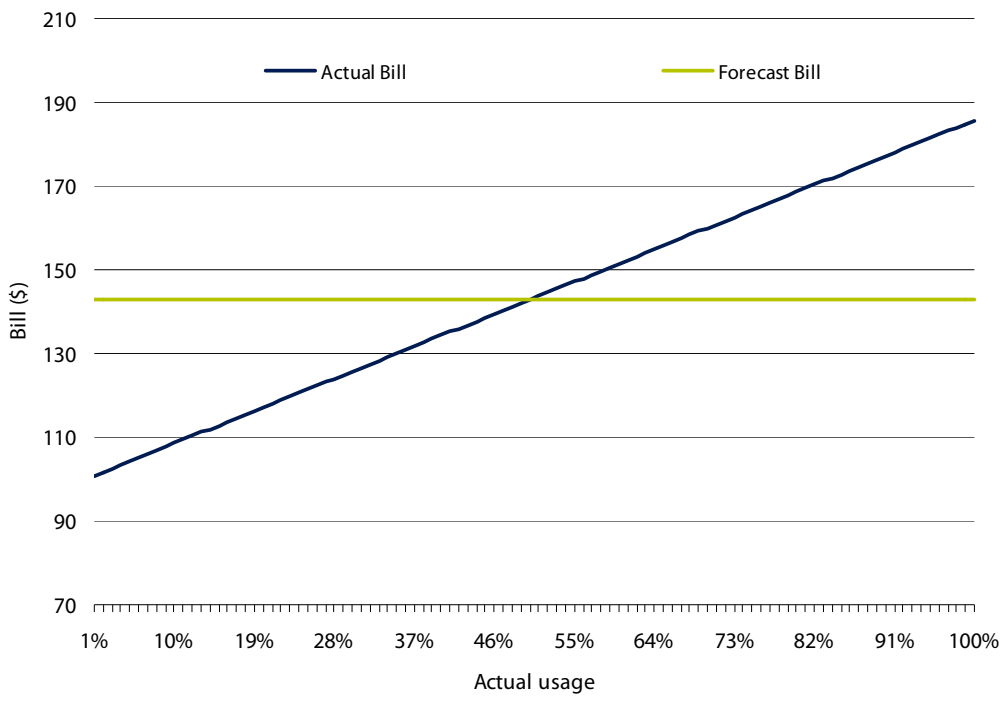
In light of these reasons, we are satisfied that the position of HWC and SCA is not sufficiently different from all other users to justify the inequities that would arise from acceptance of the utilities' proposals. Therefore, for this draft determination, we have incorporated the full entitlements of HWC and SCA into our calculations when allocating costs and setting prices.

8.4 Usage forecasts for each water source and the major utilities

As noted above, to set the variable component of the 2-part tariff for customers with a meter, we need to make assumptions about how much water will be extracted from each water source by valley over the determination period by metered water users. The accuracy of these assumptions has a big impact on NOW's cost recovery and users' bills over the period. If our usage forecasts are significantly lower than customers' actual usage, then (all other things being equal) NOW will generate more revenue than it should from usage charges (ie, it will over-recover the user share of its efficient costs). Users' bills will also be higher than we forecast when making the determination. However, if the forecasts we use are higher than actual usage, then NOW will under-recover and users' bills will be lower than forecast.

Figure 8.2 illustrates how the variation between actual usage and forecast usage influences a user's bill.

Figure 8.2 Illustrative example of how variation between forecast and actual usage impacts on users' bills



Note: The licence used for this example has an entitlement volume of 100 ML, with a fixed charge of $1 per ML and a usage charge of $0.86 per ML. Assuming forecast usage is 50% of entitlement, this is consistent with the 70:30 fixed to usage charge ratio discussed in Chapter 6.

In this example, the forecast usage for the valley was equal to 50% of the valley-wide entitlement volume. The green line represents the bill for a customer whose usage is equal to this forecast usage. The blue line shows the bill for various levels of actual

usage. The 2 lines intersect at the point where the forecast usage is equal to actual usage.

There are several different forecasting approaches that we could use as the basis for our decision on the usage forecasts we use for setting usage charges for each water source and valley. For example, we could forecast future usage over the determination period based on:

- the moving average of actual extraction levels over a certain period (eg, the past 10, 15 or 20 years), where this data exists
- modelled future extractions derived from the Integrated Quantity and Quality Model (IQQM). IQQM is a river system model widely applied in NSW for the development of water sharing and water resources plans in the regulated rivers and some other sources, or
- assumptions about future metered water usage.

For the recent State Water Determination, we decided that a 20-year moving average of actual extractions was the most appropriate method for forecasting usage for regulated rivers. However, 20 years of reliable actual extractions data was not available because State Water's information on metered water sales do not go back far enough. Therefore, we calculated the 20-year moving average using:

- 5 years of modelled IQQM extractions for the years prior to the availability of reliable actual extraction data (1990/91 to 1994/95)
- 14 years of actual extraction data (1995/96 to 2008/09), and
- a forecast for the most recent year provided by State Water (2009/10).

To make our decision for this draft determination, we considered NOW's proposed usage forecasts, stakeholder comments and our own analysis.

8.4.1 NOW's proposed usage forecasts

If IPART decided to set a 2-part tariff,[88] NOW proposed that, for regulated rivers, usage forecasts be based on a 15-year moving average of actual extraction levels. This is the same approach as State Water proposed for the 2010 Determination. NOW indicated that, in conjunction with State Water, it had commissioned the Centre for International Economics (CIE) to review IPART's approach for usage forecasts in past reviews. CIE recommended that usage forecasts be based on average extractions from the last 15 years because:

- actual extractions over the last 15 years for each valley can be more accurately identified and verified

88 NOW's first preference was for fixed entitlement charges for all users. If this proposal were accepted, usage forecasts would not be required to set prices.

- using a 15-year period of data (rather than over 100 years as previously used) accounts for climate change
- water users will be better able to assess the future price impacts of consumption forecasts
- using a 15-year period is sufficiently long to reduce price volatility within and between determinations
- using a 15 year period provides some financial stability to NOW and State Water as low recent consumption would be better reflected in prices.

NOW did not make a proposal on the usage forecasts for unregulated rivers and groundwater.

8.4.2 Stakeholder comments on usage forecasts

For regulated rivers, stakeholders opposed the use of forecasts based on a 15 or 20-year moving average of extraction levels, as NOW proposed and IPART used for the 2010 State Water Determination. Instead, they argued that usage forecasts should be based solely on IQQM modelling, which reflects the long-run average and is aligned to the modelling underpinning water sharing plans. For example, Gwydir Valley Irrigators Association, Lachlan Valley Water, NSW Irrigators Council and Tamworth Regional Council all argued that consumption forecasts for regulated rivers should be based on IQQM, as:

- CIE's review results (which recommended a 15-year moving average) were based on the assumption that there had been a 'statistical break' in water extractions and this is a spurious claim, as evidenced by the recent record-breaking rains in northern NSW
- use of the 15-year average will lead to windfall gains for NOW, should rainfall increase over the course of the 2011 Determination period
- the IQQM is the basis of water management and water sharing plans, and it is therefore inconsistent to apply a different method to estimate usage for pricing purposes.

Some stakeholders suggest a 'fall back' approach to the calculation of a 20-year average.[89] Under this proposal, the first year of the forecasts would be based on 19 years of IQQM outputs and 1 year of actual metered usage, year 2 would be based on 18 years of IQQM outputs and 2 years of actuals, and so on.

As NOW did not propose usage forecasts for unregulated rivers and groundwater, stakeholders were not able to provide comment.

89 Gwydir Valley Irrigators Association, presentation at Tamworth public hearing, 22 July 2010.

8.4.3 IPART's analysis on usage forecasts

Regulated rivers

In making the 2010 Determination for State Water's prices, we decided to use a 20-year moving average of historical IQQM data and actual extractions data, for the reasons outlined in Box 8.1.

We consider that no new evidence has emerged that would justify using different usage forecasts to calculate the regulated river charges levied by State Water and NOW. Therefore, our draft decision is to adopt the regulated river usage forecasts that were applied by us in the 2010 State Water Determination.

Box 8.1 The reasons for IPART's use of a 20-year moving average to forecast regulated river extractions for the 2010 State Water Determination

In our report on the 2010 State Water Determination, we explained that we had decided to use usage forecasts based on the 20-year moving average of actual extractions to forecast regulated river extractions, rather than the IQQM approach, for the following reasons:

- This approach focuses on more recent information and reflects current extraction conditions.
- The use of actual extractions for each valley is relatively easy to identify and verify.
- A 20-year moving average will allow State Water to recover its revenue, with a lag, because the actual extractions that occur over the 2010 Determination will be used to calculate prices at the next price review and so on.
- It relies on actual extractions where possible, rather than modelled data from the IQQM, and so does not require the IQQM to be updated at the start of each determination period.
- It provides State Water with an incentive to minimise water theft (where actual extractions are used) as any additional water sales that are captured are chargeable.

A 20-year moving average approach strikes a good balance between maintaining pricing stability over consecutive determinations and using current, updated data that incorporate recent trends to forecast future extractions.

Source: IPART 2010, Review of bulk water charges for State Water Corporation, p 122.

Unregulated rivers

For unregulated rivers, NOW was unable to provide usage forecasts or historical usage data that can be used to generate forecasts.

Based on submissions from HWC and SCA, forecasts for these utilities can be based on their average annual levels of extractions over the last few years. However, the level of usage for other unregulated river entitlement holders must still be established.

We have attempted to establish a best estimate of usage volumes for metered usage of unregulated rivers by:

- examining available water determinations
- mapping extraction information from water sharing plans to valleys, and
- seeking information from other organisations, such as the CSIRO.

As the NSW water resource manager, we expect that NOW would be able to provide some estimates of unregulated river water extractions, or be able to develop reasonable forecasts of these extractions. One explanation is that, without meters, unregulated river usage is inherently hard to monitor and hence forecast. However, we note that more data should become available over the next few years as the Commonwealth funded meter roll-out progresses.

In light of the limited information available on which to base forecasts, our draft decision is to:

- adopt usage forecasts of 100% of entitlement (except for HWC and SCA), and
- adopt usage forecasts for HWC and SCA based on their average annual historical level of extractions, using 4 years and 10 years of data, respectively.[90]

We consider that this approach removes the potential for an adverse outcome for customers arising from inaccurate usage forecasts, as NOW cannot over-recover under this option. In addition, it provides NOW with an incentive to collect and provide adequate metering data for future determinations. As meters are rolled out, NOW will have a substantial incentive to ensure that usage data is collected, and that robust forecasts of metered usage are developed.

Groundwater

We face similar problems in setting forecasts for metered usage of groundwater, as for unregulated rivers. There is a lack of verifiable usage data on which to base forecasts. NOW has not provided reliable usage data or its own estimate of usage, despite the large proportion of groundwater customers that are subject to a 2-part tariff.

Consistent with our decision for unregulated rivers, our draft decision is to assume 100% usage of entitlement for groundwater customers (except for HWC, where we have used forecasts based on its average annual level of extractions, due to the presence of reliable extraction data).

With the continued rollout of meters, we expect that NOW will be able to provide reliable usage data that will form the basis of forecasts in future determinations – particularly as the collection of usage data and monitoring of usage are central to NOW's water management functions.

90 This data was provided by each organisation in their submissions to this review.

9 Draft water management prices

Using the approach outlined in Chapter 2 and the draft decisions set out and discussed in Chapters 3 to 8, we calculated draft water management prices for regulated rivers, unregulated rivers, and groundwater users over the 2011 Determination period.

Draft decision

16 IPART's draft decision is to set the water management prices listed in Table 9.1 to Table 9.9 below.

These tables show the draft prices in $2009/10. They also show the change in price levels (in dollars per ML and percentage terms) relative to 2009/10 levels, and compare this change to the change that would have occurred if we had accepted NOW's proposed prices (where a comparison is possible). The tables illustrate that NOW's prices increase substantially under this draft determination, but considerably less than under NOW's proposal.

As Table 9.6 indicates, a relatively small number of licence holders will continue to be charged on an area basis, until water sharing plans are implemented. NOW's submission suggests that area-based charges will only be required for some entitlement holders in the Far West Valley, and that these charges are expected to be phased out and replaced with entitlement-based charges over the course of the 2011 Determination period. IPART has received advice from NOW that there are a small number of users in other valleys who do not yet have a licence with specified entitlement (or user share). NOW has undertaken to address these anomalies before 1 July 2011.

Chapter 12 provides our analysis of the implications of these draft prices for water users and NOW. Appendix K shows the draft prices in $2010/11, and Appendix O shows the impact of the major cost drivers (cost allocation, entitlement volumes and usage forecasts) on variations in prices between water sources and valleys.

9.1.1 Conversion factors and conversion ratios

Draft decision

17 IPART's draft decision is to not include conversion factors or conversion ratios in this draft determination.

When a water sharing plan is implemented, Water Act (WA) licences, which are denominated in ML, are converted to Water Management Act (WMA) licences, which are denominated in unit shares. According to information provided by NOW, this conversion occurs on a 1 ML equals 1 unit share basis. However, the water sharing plan may reduce the volume of water that can be extracted in a valley.

For example, consider a valley with 100,000 ML of entitlement under the WA, which will have extractions reduced to 80,000 ML after the implementation of the water sharing plan. This would result in a valley entitlement of 100,000 unit shares under the WMA, with each unit share allowing a user to extract 0.8ML (ie, 80,000 ML/100,000 unit shares = 0.8ML/unit share).

The 2006 Determination applied a 'conversion factor' to surface water (regulated and unregulated rivers) to reduce a licence holder's entitlement charge in line with the initial reduction in entitlements when converting from a volumetric licence (WA) to a licence based on unit shares (WMA). For example, a 20% reduction in entitlements resulted in a conversion factor of 0.8 being applied to the entitlement charge.

In contrast, a 'conversion ratio' was applied to groundwater entitlements. This was a different mechanism to the conversion factor, which had the effect of keeping unit share charges (and NOW's revenue) constant, regardless of reductions in the users' extractable water. The main reason given in 2006 for the different treatment of groundwater was the low usage volumes for this water type. As a result, at that time, it was considered that reductions in water available for extraction were not likely to result in reduced levels of usage.

9.1.2 IPART's draft decision about conversion factors and conversion ratios

For surface water, the conversion factors that were applied to mitigate bill impacts for licence holders in the 2006 Determination effectively reduced entitlement charges in line with extractable water. This was in recognition of the unprecedented reductions in extractable surface water that were imposed by the first round of water sharing plans.

A considerable period of time has now passed since the first round of water sharing plans were implemented. We have reassessed whether there is a case for the use of conversion factors for the 2011 Determination. We have identified the following arguments against the continued use of conversion factors in the draft determination:

- Conversion factors violate the principle that entitlement is the major driver of costs. This principle has been applied throughout the determination, and the use of conversion factors would undermine this key principle of the determination.
- Costs have been allocated based on the entitlement figures provided by NOW. Any adjustment to prices via the use of conversion factors would undermine the cost allocation scheme and reduce the level of cost recovery.

- In addition, there are concerns about inequity arising from the point in time at which a licence is converted to the WMA, and the date at which the discount to users ceases. Users whose licences were converted at an early point are likely to receive less benefit from the conversion factor than those who convert at a later point (ie, after the Basin Plan is implemented). This is because conversion factors will vary based on the size of the initial reduction in extractable water in the valley.

For these reasons, we have not included conversion factors for surface water in the draft determination. NOW has recommended that conversion ratios are not required for groundwater, and as there is no potential impact to customers, we have excluded the conversion ratio from the draft determination.

Table 9.1 Regulated River Tariffs – *Fixed* component of 2-part tariff ($2009/10)

	Price ($/ML) Year ending June				Increase from 2010 to 2014 ($/ML)		Increase from 2010 to 2014 (%)		
Valley	**2010**	**2012**	**2013**	**2014**	**IPART**	**NOW proposed**	**IPART**	**NOW proposed**	**Difference in change between IPART and NOW (%)**
Border	1.40	1.94	2.06	2.10	0.69	1.78	49%	127%	-77%
Gwydir	0.78	1.02	1.20	1.23	0.45	1.24	57%	158%	-101%
Namoi	1.21	1.79	2.14	2.48	1.27	2.76	104%	227%	-123%
Peel	1.17	1.46	1.76	2.11	0.94	3.80	80%	325%	-244%
Lachlan	0.97	1.17	1.40	1.68	0.71	1.88	73%	193%	-121%
Macquarie	0.97	1.31	1.57	1.78	0.81	1.76	84%	181%	-97%
Murray	1.38	1.30	1.33	1.35	-0.03	1.27	-2%	92%	-94%
Murrumbidgee	1.04	1.02	1.08	1.10	0.07	1.27	6%	122%	-116%
North Coast	2.99	3.50	4.20	5.04	2.05	6.31	68%	211%	-142%
Hunter	1.23	1.71	2.05	2.46	1.24	5.34	101%	435%	-335%
South Coast	2.97	3.13	3.76	4.51	1.54	5.92	52%	199%	-147%

Note: Totals or percentage changes may not add due to rounding.

Table 9.2 Regulated River Tariffs – *Usage* component of 2-part tariff and supplementary water and floodplain harvesting usage charges ($2009/10)

Valley	Price ($/ML) Year ending June				Increase from 2010 to 2014 ($/ML)		Increase from 2010 to 2014 (%)		
	2010	2012	2013	2014	IPART	NOW Proposed	IPART	NOW Proposed	Difference in change between IPART and NOW (%)
Border	1.63	1.49	1.58	1.61	-0.02	0.81	-2%	49%	-51%
Gwydir	0.92	0.94	1.11	1.13	0.22	0.75	24%	82%	-59%
Namoi	1.46	1.22	1.47	1.70	0.24	1.19	17%	82%	-65%
Peel	2.12	2.32	2.79	3.34	1.22	6.92	58%	326%	-268%
Lachlan	1.12	1.34	1.61	1.93	0.82	2.64	73%	236%	-163%
Macquarie	1.31	1.26	1.51	1.71	0.40	1.61	30%	123%	-92%
Murray	0.38	0.84	0.86	0.88	0.50	0.67	134%	178%	-44%
Murrumbidgee	0.27	0.65	0.69	0.71	0.44	0.37	167%	139%	28%
North Coast	2.01	3.47	4.16	4.99	2.98	5.92	149%	295%	-146%
Hunter	1.21	1.10	1.32	1.58	0.37	3.33	30%	274%	-244%
South Coast	1.99	3.51	4.21	5.05	3.07	3.89	154%	196%	-42%

Note: Totals or percentage changes may not add due to rounding.

Table 9.3 Unregulated River Tariffs – *Fixed* component of 2-part tariff ($2009/10)

Valley	Price ($/ML) Year ending June				Increase from 2010 to 2014	
	2010	2012	2013	2014	S/ML	%
Border	1.68	2.34	2.81	3.37	1.69	101%
Gwydir	1.68	2.34	2.81	3.37	1.69	101%
Namoi	1.68	2.34	2.81	3.37	1.69	101%
Peel	1.68	2.34	2.81	3.37	1.69	101%
Lachlan	2.98	4.16	4.99	5.30	2.31	78%
Macquarie	2.98	4.16	4.99	5.30	2.31	78%
Far West	3.51	3.77	4.04	4.21	0.70	20%
Murray	3.08	4.30	5.16	6.11	3.03	98%
Murrumbidgee	3.71	5.19	6.23	7.48	3.77	102%
North Coast	4.14	5.53	6.01	6.32	2.18	53%
Hunter	2.75	1.91	2.02	2.08	-0.67	-24%
South Coast	2.15	1.89	1.96	2.04	-0.11	-5%

Note: Totals or percentage changes may not add due to rounding.

Table 9.4 Unregulated River Tariffs – *Usage* component of 2-part tariff and floodplain harvesting usage charge ($2009/10)

Valley	Price ($/ML) Year ending June				Increase from 2010 to 2014	
	2010	2012	2013	2014	$/ML	%
Border	1.10	1.00	1.20	1.44	0.34	31%
Gwydir	1.10	1.00	1.20	1.44	0.34	31%
Namoi	1.10	1.00	1.20	1.44	0.34	31%
Peel	1.10	1.00	1.20	1.44	0.34	31%
Lachlan	1.97	1.78	2.14	2.27	0.30	15%
Macquarie	1.97	1.78	2.14	2.27	0.30	15%
Far West	2.26	1.61	1.73	1.80	-0.46	-20%
Murray	2.04	1.84	2.21	2.62	0.57	28%
Murrumbidgee	2.47	2.23	2.67	3.21	0.73	30%
North Coast	2.73	2.37	2.58	2.71	-0.02	-1%
Hunter	1.82	1.80	1.90	1.96	0.13	7%
South Coast	1.44	1.24	1.29	1.34	-0.10	-7%

Note: Totals or percentage changes may not add due to rounding.

Table 9.5 Unregulated River Tariffs – Entitlement charges for customers on 1-part tariff ($2009/10)

Valley	Price ($/ML) Year ending June				Increase from 2010 to 2014 ($/ML)		Increase from 2010 to 2014 (%)		
	2010	2012	2013	2014	IPART	NOW Proposed	IPART	NOW Proposed	Difference in change between IPART and NOW (%)
Border	2.78	3.34	4.01	4.81	2.03	4.13	73%	148%	-76%
Gwydir	2.78	3.34	4.01	4.81	2.03	4.13	73%	148%	-76%
Namoi	2.78	3.34	4.01	4.81	2.03	4.13	73%	148%	-76%
Peel	2.78	3.34	4.01	4.81	2.03	4.13	73%	148%	-76%
Lachlan	4.95	5.94	7.12	7.56	2.62	5.16	53%	104%	-51%
Macquarie	4.95	5.94	7.12	7.56	2.62	5.16	53%	104%	-51%
Far West	5.78	5.38	5.77	6.01	0.24	2.13	4%	37%	-33%
Murray	5.12	6.15	7.38	8.72	3.60	6.06	70%	118%	-48%
Murrumbidgee	6.18	7.42	8.91	10.69	4.50	13.79	73%	223%	-150%
North Coast	6.87	7.90	8.59	9.02	2.15	4.89	31%	71%	-40%
Hunter	4.57	3.71	3.92	4.03	-0.54	-0.96	-12%	-21%	9%
South Coast	3.59	3.13	3.25	3.38	-0.21	0.73	-6%	20%	-26%

Note: Totals or percentage changes may not add due to rounding.

Table 9.6 Unregulated River Tariffs – Customers on area-based charges ($2009/10)

Valley	Price ($/ha) Year ending June				Increase from 2010 to 2014 ($/ML)		Increase from 2010 to 2014 (%)		
	2010	2012	2013	2014	IPART	NOW Proposed	IPART	NOW Proposed	Difference in change between IPART and NOW (%)
Far West	27.07	25.22	27.06	28.18	1.11	10.00	4%	37%	-33%

Table 9.7 Groundwater Tariffs – *Fixed* component of 2-part tariff ($2009/10$)

Valley	Price ($/ML) Year ending June				Increase from 2010 to 2014	
	2010	2012	2013	2014	$/ML	%
Border	2.47	3.12	3.74	4.39	1.92	77%
Gwydir	2.47	3.12	3.74	4.39	1.92	77%
Namoi	2.47	3.12	3.74	4.39	1.92	77%
Peel	2.47	3.12	3.74	4.39	1.92	77%
Lachlan	3.06	3.90	4.16	4.39	1.33	44%
Macquarie	3.06	3.90	4.16	4.39	1.33	44%
Far West	4.55	3.95	4.16	4.39	-0.16	-3%
Murray	2.63	3.32	3.99	4.39	1.76	67%
Murrumbidgee	1.24	1.55	1.86	2.23	0.99	80%
North Coast	4.55	3.58	3.63	3.67	-0.88	-19%
Hunter	4.55	3.58	3.63	3.67	-0.88	-19%
South Coast	4.55	3.58	3.63	3.67	-0.88	-19%

Note: Totals or percentage changes may not add due to rounding.

Table 9.8 Groundwater Tariffs – *Usage* component of 2-part tariff ($2009/10)

Valley	Price ($/ML) Year ending June				Increase from 2010 to 2014	
	2010	2012	2013	2014	$/ML	%
Border	1.24	1.34	1.60	1.88	0.64	52%
Gwydir	1.24	1.34	1.60	1.88	0.64	52%
Namoi	1.24	1.34	1.60	1.88	0.64	52%
Peel	1.24	1.34	1.60	1.88	0.64	52%
Lachlan	1.58	1.67	1.78	1.88	0.30	19%
Macquarie	1.58	1.67	1.78	1.88	0.30	19%
Far West	2.27	1.69	1.78	1.88	-0.39	-17%
Murray	1.33	1.42	1.71	1.88	0.56	42%
Murrumbidgee	0.61	0.66	0.80	0.96	0.35	57%
North Coast	2.27	1.63	1.65	1.67	-0.61	-27%
Hunter	2.27	1.63	1.65	1.67	-0.61	-27%
South Coast	2.27	1.63	1.65	1.67	-0.61	-27%

Note: Totals or percentage changes may not add due to rounding.

Table 9.9 Groundwater Tariffs – *Entitlement* charges for customers on a 1-part tariff ($2009/10)

Valley	Price ($/ML) Year ending June				Increase from 2010 to 2014 ($/ML)		Increase from 2010 to 2014 (%)		
	2010	2012	2013	2014	IPART	NOW Proposed	IPART	NOW Proposed	Difference in change between IPART and NOW (%)
Border	2.47	4.45	5.34	6.27	3.80	7.81	154%	316%	-162%
Gwydir	2.47	4.45	5.34	6.27	3.80	7.81	154%	316%	-162%
Namoi	2.47	4.45	5.34	6.27	3.80	7.81	154%	316%	-162%
Peel	2.47	4.45	5.34	6.27	3.80	7.81	154%	316%	-162%
Lachlan	3.06	5.57	5.94	6.27	3.21	7.23	105%	236%	-131%
Macquarie	3.06	5.57	5.94	6.27	3.21	7.23	105%	236%	-131%
Far West	4.55	5.64	5.94	6.27	1.72	5.74	38%	126%	-88%
Murray	2.63	4.74	5.69	6.27	3.64	7.66	139%	291%	-153%
Murrumbidgee	1.24	2.21	2.66	3.19	1.95	9.05	158%	732%	-574%
North Coast	4.55	5.20	5.28	5.33	0.78	4.68	17%	103%	-86%
Hunter	4.55	5.20	5.28	5.33	0.78	4.68	17%	103%	-86%
South Coast	4.55	5.20	5.28	5.33	0.78	4.68	17%	103%	-86%

Note: The columns that show the increases relative to 2009/10 prices assume that users are moving from the 1-part tariff under the 2006 Determination (ie, properties currently not in 'Groundwater Management Areas') to the new 1-part tariff under the 2011 Determination.
Totals or percentage changes may not add due to rounding.

10 Meter service and reading charges for unregulated river and groundwater users

In addition to periodic water management charges (discussed in Chapters 4 to 9), NOW has proposed to introduce meter service charges. These charges are intended to recover the efficient costs it incurs in maintaining government-installed meters.

NOW's proposal was partly prompted by its planned roll out of several thousand Commonwealth Government funded meters across the Hawkesbury-Nepean River and Murray Darling Basin over the coming years. In addition, our 2010 State Water Determination introduced meter service charges for regulated rivers. Improved water metering is expected to play an important role in improving water resource management.

In addition, this chapter sets out our draft decisions in relation to the recovery of costs associated with reading user-owned meters, the resolution of disputes related to meter accuracy and validating relocated meters.

The section below sets our draft decisions on meter service, reading, dispute resolution and validation charges (for simplicity, we often refer to these charges collectively as 'meter service and reading charges' in this report). We note that these charges are for unregulated river and groundwater users, as meter service charges for regulated rivers were included in the 2010 State Water Determination. The subsequent sections discuss NOW's proposed charges, stakeholders' comments and our analysis. The final section in this chapter outlines our response to NOW's plan to exempt Hawkesbury-Nepean River users from the meter service charge until 2013/14.

10.1 Summary of draft decisions on meter service, reading, dispute resolution and validation charges

Draft decision:

18 IPART's draft decision is to introduce the meter service, reading, dispute resolution and validation charges shown in Table 10.1.

Table 10.1 Draft decision on meter service and reading charges for unregulated river and groundwater users ($2009/10)

Description	Charge
Meter Service Charge (government-installed meters)	
Mechanical meter – with data logger	$213 (per meter pa)
Electromagnetic meter – with data logger	$279 (per meter pa)
Electromagnetic meter – with data logger and mobile data modem	$364 (per meter pa)
Electromagnetic meter – with data logger and satellite data modem	$679 (per meter pa)
Channel meter with mobile phone or satellite telemetry coverage	$679 (per meter pa)
Separate charges	
Manual meter reading fee (user-owned meters)	$131 (per meter pa)
Refundable deposit for Dispute Resolution[a] (government-installed and user-owned meters)	
Mechanical meter	$105 (per meter, per dispute)
Electromagnetic meter	$195 (per meter, per dispute)
Channel meter with mobile phone or satellite telemetry coverage	$195 (per meter, per dispute)
Validation of a relocated meter (government-installed and user-owned meters)	
Mechanical meter	$105 (per meter)
Electromagnetic meter	$195 (per meter)
Channel meter with mobile phone or satellite telemetry coverage	$195 (per meter)

[a] In response to a lodgement of a dispute claim, the user will pay the charge. If the assessment shows meter reading is within agreed standards, the deposit will be forfeited and the reading will stand. If the meter is not within agreed standards, the deposit will be refunded, and previous readings will be adjusted. The installer/owner of the meter (ie, government or user) will be responsible for maintenance/replacement of the meter.

10.2 NOW's proposal on meter service charges

NOW's December 2010 submission noted that the Commonwealth Government will provide funding for it to install approximately 2,000 meters in the Hawkesbury-Nepean River as part of Hawkesbury-Nepean River Recovery Program, and about 9,000 meters for groundwater and unregulated rivers in the Murray Darling Basin as part of the Water for the Future Program. NOW also noted that the Commonwealth will provide funding to State Water for the installation of around 5,500 users on regulated rivers in the Murray Darling Basin.

The schedule for meter installation over the 2011 Determination period is outlined in Table 10.2 below. NOW indicated that, under the Commonwealth-funded schemes, metering will apply to the holder of the approval for a pump, bore, or other extraction work, and a broad principle will be to meter 95% of water extraction from a water source. Metering will not apply to:

- water supplied by town water supply schemes, irrigation corporations, or other rural water supply schemes to their customers downstream of bulk off-takes
- extractions under Basic Landholder Rights
- extraction by small diameter pumps (minimum size to be determined)
- extraction by small volume licence holders (minimum size to be determined)
- farm dams not on rivers
- works approvals that are not of an extractive nature.

Table 10.2 Schedule for installation of Commonwealth-funded meters (meters installed)

	2010/11	2011/12	2012/13	2013/14
Hawkesbury-Nepean	1,300	100		
NSW area of Murray-Darling Basin	340	1,100	1,100	2,180
Total	1,640	1,200	1,100	2,180

Source: NOW supplementary submission, May 2010, p 3.

NOW noted that improved water metering will:

- improve water resource management
- enable flow event sharing to be established where appropriate
- enable the protection of environmental flows passing down rivers
- improve river operation by enabling more precise management of flows
- improve the ability to detect any non-compliance of approval holders with the conditions of their licence
- improve public and investor confidence in the management of water and the integrity of the water entitlement systems
- support on-farm investment and operational enhancements to achieve more water and energy efficient water extraction and distribution
- improve the capacity to identify and obtain river system water savings
- support water plan development, implementation and review
- open up water allocation trading in unregulated river and groundwater systems, and
- reduce meter down time, thereby reducing costs of estimating missing information and associated errors.

While the Commonwealth is funding the capital costs of new meters (ie, purchase and installation costs), NOW and State Water will be responsible for their ongoing operation and maintenance costs. Therefore, to recover its metering operation and maintenance costs, NOW proposed the following meter service charges for unregulated rivers and groundwater[91] for the 2011 Determination period:

- **A 'full meter service charge' of $379 per annum in areas where there are currently no meter reading activities**. This is based on NOW's estimates of annual meter operation and maintenance costs, which range from $230 to $696, depending on meter type (see Table 10.3), and the expected makeup of the meter fleet (see Table 10.4). That is, $379 is an average of the costs in Table 10.3, weighted according to the composition of the meter fleet outlined in Table 10.4. According to NOW, these operation and maintenance costs comprise:
  - meter reading (manual and remote)
  - meter maintenance (including annual visits, two-yearly validation inspections to certify compliance with national water metering standards, repair of faults)
  - ongoing entry and management of metering data ('metering information system'), and
  - 'dispute resolution' (see Table 10.3).
- **A 'reduced meter service charge' of $33 per meter, per annum in areas where there are currently meter reading activities.** NOW proposed this lower charge because it has included its cost of current meter reading activities[92] (approximately $1.36 million per annum) in its general cost base to be recovered through water management charges to all entitlement holders within an area (regardless of whether or not they actually have a meter).
- **A $306 charge for validating the accuracy of a relocated meter**.

NOW's forecast meter service costs (listed in Table 10.3) are based on a report by Nayar Consulting.[93] This was the same report used by State Water in developing its proposed meter service charges, which were largely accepted by IPART in the 2010 Determination of State Water's prices. NOW has given IPART approval to publish this report. It is available from IPART's website.

NOW noted that its maintenance costs to be recovered through its proposed meter service charge do not include costs covered by the meter manufacturer's 3-year warranty. According to NOW, this warranty covers the cost of repairing a component failure attributed to faulty manufacture or materials used, but not routine maintenance costs. The proposed charge also excludes costs related to removal of a meter, replacement of meters, installation of new meters, and component failure

91 Charges for regulated rivers are levied by State Water and have been set by the 2010 State Water Determination.

92 State Water undertakes these activities, under contract with NOW.

93 Nayar Consulting, *Assessment of Annual Operation and Maintenance Costs for the NSW (Hawkesbury Nepean and NSW Murray-Darling Basin) Metering Scheme*, September 2009, which is available on IPART's website under submissions received, 18 October 2010.

(where the meter is outside the 3-year warranty period). NOW indicated that it may propose charges for these costs and activities at the next price determination.

We requested additional information from NOW about the level of these future costs and how much its proposed meter service charge would be from 2014, once these costs are included within the meter service charge. NOW was not able to provide an estimate of future costs and charges, noting that it will be assessing the potential costs over the next few years based on the experience with the roll-out of the NSW metering program.[94]

NOW proposed that its meter service charges will be levied on holders of a water supply works approval, for the financial year following the meter's installation. However, for approval holders in the Hawkesbury Nepean area, it proposed that the meter service charge commence from 1 July 2013. According to NOW:

> The Hawkesbury Nepean area was selected as the first trial area for a metering roll out, during negotiations with landholders in respect of issues relating to this rollout, commitments were given that charges would not be levied in the Hawkesbury Nepean until 1 July 2013.[95]

94 Correspondence from NOW, 15 July 2010.
95 NOW supplementary submission, May 2010, p 8.

Table 10.3 NOW's estimated annual operating and maintenance costs for each meter type ($2009/10)

	Meter Reading		Meter Maintenance			Meter Information System	Dispute Resolution	Total Direct Cost
	Manual	Remote	Validation	Consumables	Unplanned			
Mechanical meter – with data logger	75	0	60	10	12	56	17	230
Electromagnetic meter – with data logger	75	0	78	10	60	56	17	296
Electromagnetic meter – with data logger and mobile data modem	75	60	78	20	75	56	17	381
Electromagnetic meter – with data logger and satellite data modem	75	360	78	20	90	56	17	696

Source: NOW's supplementary – Metering Charges – 4 May 2010.

Table 10.4 NOW's estimate of the make-up of the meter stock

Type of meter	Estimated proportion of fleet of meters
Mechanical meter- with data logger	7.5%
Electromagnetic meter – with data logger	7.5%
Electromagnetic meter – with data logger and mobile data modem	80%
Electromagnetic meter – with data logger and satellite data modem	5%

Note: IPART received correspondence from NOW on 22 September 2010 stating that while its submission did not include channel meters, it does intend to install channel meters. Therefore, the estimated proportion of fleet meters is subject to change.

Source: NOW's supplementary – Metering Charges – 4 May 2010.

10.3 Stakeholder views on NOW's proposed meter service charges

In contrast to stakeholder responses received in the course of the 2010 State Water Determination, NOW's stakeholders have strongly objected to NOW's proposal for a meter service charge, arguing that:

- the meter service charge is premature as business plans and information on the proposal have not been made available to stakeholders
- the proposed charges are excessive relative to the current operating and maintenance costs of existing meters, which are argued to be close to zero.

In addition:

- The Coastal Valleys Customer Service Committee argued that the cost of the metering program is greater than the value of the water being metered.[96] It also questioned the equity of NOW's metering program, as some stakeholders will receive Commonwealth-funded meters, while other stakeholders will be responsible for the capital cost of their own meters.
- Murrumbidgee Irrigation[97] and Murray Irrigation[98] argued that there may be double-counting of meter reading costs across regulated, unregulated, and groundwater sources. They stated that on regulated rivers they are already paying the meter reading costs through the charges paid to State Water.
- The Lower Hawkesbury Nepean Users Association argued that NOW's proposed meters include inappropriate technology (such as telemetry enabled meters), which results in excessive operating and maintenance costs for the meters and that there should be a guarantee against future cost increases arising from NOW's decision to select inappropriate technology.[99] It also stated that there should be no charge for validating a relocated meter, particularly where pumps are relocated due to floods (as users are often simply moving the pump to protect it). This also applies to the capital costs for the replacement of meters, where they are destroyed due to external factors such as floods, vandalism or storms.
- The NSW Farmer's Association stated there should not be a manual meter reading fee for telemetry meters where the annual meter read occurs at the same time as the maintenance visit.[100] It also suggested the components of the meter service charge they consider to be appropriate. This includes the $17 per meter, per year of dispute resolution costs that relate to metering accuracy, as these should not be spread across all users with a meter, but directly charged to the user with a dispute.

96 Coastal Valleys Customer Service Committee submission, 16 June 2010, pp 2-3.
97 Murrumbidgee Irrigation submission, 17 June 2010, p 3.
98 Murray Irrigation submission, 16 June 2010, p 8.
99 Lower Hawkesbury Nepean Users Association submission, 16 June 2010, pp 4-5.
100 NSW Farmers Association submission, 15 June 2010, p 2.

We have considered these arguments in reviewing NOW's proposal and in making our decisions on meter service charges (discussed below).

10.4 IPART's analysis on meter service and reading charges

In relation to stakeholders' general concern that the introduction of meter service charges is premature, and that the proposed charges are excessive, we note that in the 2010 State Water Determination we approved the introduction of transitional meter service charges that were based on the same information as NOW provided to this review. State Water's stakeholders did not raise objections to that proposal. To be consistent with the State Water Determination, we consider that setting transitional meter service charges for NOW based on the current available information is appropriate.

We also note that the new meters to be installed must meet the standard of a 5% accuracy bandwidth as specified in the National Framework for Non-Urban Water Metering.[101] This means that meters must be maintained and validated on a regular basis. This contrasts with the existing position, where the accuracy standards for meter reading do not apply and meters may not be maintained to ensure this level of accuracy. Therefore, we do not consider the meter maintenance costs of existing meters of zero to be comparable. We have reviewed the Nayar Consulting Report, which shows how NOW's proposed meter service charges have been estimated, and consider that the cost estimates are reasonable and reflect the efficient cost of operating the new meters.[102]

In response to the concerns raised by specific stakeholders about the equity of the planned metering program, the potential for double-counting of meter reading costs across regulated, unregulated and groundwater sources, validation fees, and dispute resolution costs, we note that:

- NOW has stated in its submission that it intends to exclude extraction by small diameter pumps and small volume licence holders from the metering program, which should address the concern about equity. Further, user-owned meters are not subject to the meter service charge and this provides a benefit to these users (which offsets the capital costs these users are subject to).
- NOW's metering proposal relates only to unregulated and groundwater water sources and thus will only be charged to users on these water sources, so there will be no double-counting of the costs.

[101] http://www.environment.gov.au/water/policy-programs/srwui/metering/index.html

[102] See Nayar Consulting, *Assessment of Annual Operation and Maintenance Costs for the NSW (Hawkesbury Nepean and NSW Murray-Darling Basin) Metering Scheme*, September 2009, which is available on IPART's website under submissions received, 18 October 2010, for a detailed description of how the costs have been estimated.

- NOW has indicated that it would not charge a validation fee where the meters are moved due to external factors. Regarding the future capital costs to be recovered in the meter service charge, NOW is yet to consider what the components and level of charges will be.[103]
- In relation to disputes about meter accuracy, we agree with the NSW Farmer's Association's view that these costs should be recovered from the individual licensee and not spread across all users, and we have made a draft decision that the dispute resolution costs related to meter accuracy be directly charged to the user involved via a refundable deposit, as discussed below.

The sections below explain our decisions on meter service charges, and the rationale for our decisions on charges for manual meter reading of user owned meters, dispute resolution and validation of relocated meters in more detail.

10.4.1 Meter service charges

As outlined in Table 10.1, our draft decision is to set the following meter service charges for Government installed meters:

- mechanical meter with data logger – $213 per meter, per annum
- electromagnetic meter with data logger – $279 per meter, per annum
- electromagnetic meter with data logger and mobile data modem – $364 per meter, per annum
- electromagnetic meter with data logger and satellite data modem – $679 per meter, per annum
- Channel meter with mobile phone or satellite telemetry coverage – $679 per meter, per annum.

These charges incorporate NOW's estimated operating and maintenance costs for each meter type[104], but exclude NOW's proposed dispute resolution costs. As discussed below, we have decided to introduce a separate, refundable deposit related to dispute resolution of the accuracy of meter reading. The costs of all other disputes regarding the meters are expected to be covered from the general cost base.

[103] Correspondence received from NOW, 20 August 2010.

[104] The exception is the charge for channel meters. NOW did not provide cost estimates for channel meters in its May 2010 submission on meter service charges, and it has only recently advised IPART (22 September 2010) that it may be installing some channel meters. In the 2010 State Water Determination, IPART decided to set charges for channel meters (mobile phone or satellite telemetry coverage) based on the costs of the electromagnetic meter with data logger and satellite data modem. To ensure consistency, we have applied the equivalent costs of the electromagnetic meter with data logger and satellite data modem to channel meters.

NOW's estimated operating and maintenance costs for each meter type, as outlined in Table 10.3 and NOW's May 2010 submission, are based on the findings of the Nayar Consulting Report. We have reviewed this report, and we consider that its cost estimates are reasonable.

Rather than NOW's proposal of a weighted average meter service charge (which would not vary by meter type), we have decided to set charges by 5 meter types.[105] This approach is more cost-reflective, which means that users with lower cost meters will not cross-subsidise those with higher cost meters. It is also consistent with our approach in the 2010 State Water Determination.

We also considered the option of including the metering costs within NOW's general operating expenditure base to be recovered through standard water management prices, rather than separate meter service charges. This would recognise that metering is a key element of water resource management, which can ultimately benefit all users and the environment and not just those with an installed meter. However, we are concerned about the inequities and lack of transparency arising from including the metering costs in the general operating cost base. We also note that this would require accurate estimates of the meter roll-out program, in order to ensure that NOW does not over or under recover its costs.

We consider that separate meter service charges have the following benefits:

- there is no risk that NOW will under or over recover its meter service costs, due to variations between the actual and forecast number of meter installations – as costs are only recovered from meters that are actually installed
- metering costs are recovered transparently, from the user that is subject to metering
- they are consistent with the impactor pays principle
- they are consistent with the 2010 State Water Determination.

Therefore, we decided to set separate meter service charges rather than include the metering costs in NOW's general operating cost base. In doing so, we have been careful to ensure that meter service costs are not included in NOW's general operating cost base, so that users' don't pay twice for the same meter servicing activities.

We note that a potential issue arising from our draft decision is that the meter service charge or meter reading charge could represent a significant increase in the annual bill for licence holders with small entitlement volumes. We also note that NOW's May 2010 supplementary submission states that its metering scheme, and hence its meter service charge, will not apply to extraction by small diameter pumps or small

[105] There is limited potential for 'non standard' meters to be installed that do not match the above per meter type charges. We would expect that the 'non standard' components of the meter are likely to be a small part of the overall costs of a meter and, therefore, would expect that most meters should broadly fit into the categories specified.

volume licence holders, but that the 'minimum size' is yet to be determined. Prior to our final determination, we seek confirmation from NOW on the minimum entitlement size, per licence holder, to which its proposed metering scheme will apply.

NOW has indicated that it will be the entity responsible for deciding what meter type is installed. Users will not be able to exercise choice between the meter types. As such, NOW is concerned that disputes may arise when a more expensive meter type is installed. We consider that clear criteria should be developed and published by NOW about the framework that will be applied when deciding what government–installed meter type will be installed, and where. This would assist IPART and users, and minimise the potential for disputes. We ask that NOW provide this framework in its submission in response to this draft report, so we can include it in our final report. This would improve transparency and ultimately help manage potential disputes.

IPART's draft decision

19 Require NOW to provide information on the criteria that it will apply when deciding what type of government–installed meter type will be installed where, and to provide this information to IPART by 29 November.

10.4.2 Separate metering charges

In addition to the above-mentioned meter service charges, Table 10.1 shows that we have decided to introduce the following meter related charges:

- manual meter reading fee for user owned meters – $131 per meter, per year
- refundable deposit for resolving disputes related to the accuracy of meter reads for Government-installed and user owned meters:
  - mechanical meters – $105 per meter
  - electromagnetic meters – $195 per meter
  - channel meter with mobile phone or satellite telemetry coverage – $195 per meter
- validation of a relocated meter for Government-installed and user owned meters:
  - mechanical meters – $105 per meter
  - electromagnetic meters – $195 per meter
  - channel meter with mobile phone or satellite telemetry coverage – $195 per meter.

Manual meter reading fees

NOW did not propose a separate charge for reading existing, user-owned meters. Rather, it included its forecast costs of reading these meters in its general cost base, to be recovered from all entitlement holders through water management charges.

However, we have extracted these forecast costs from NOW's cost base (as discussed in Chapter 4), and instead set a separate charge for reading user-owned meters on unregulated rivers and groundwater sources.[106] This is because we consider that entitlement holders with meters should pay for these costs, rather than all entitlement holders (irrespective of whether they have meters). This is also consistent with the approach taken to meter reading costs for government-installed meters, which will be recovered through the meter service charges listed in Section 10.4.1 above. This separate meter reading charge for user-owned meters is not dependant on the meter service charge for Government installed meters coming into effect. As such, NOW does not face additional revenue risk arising from this decision.

The meter reading charge of $131 per year is based on estimated costs provided in the Nayar Consulting Report, and includes:

- a manual meter reading cost of $75, and
- a meter information system cost of $56.

Refundable deposits for dispute resolution

NOW's proposed meter service charge included $17 for costs related to dispute resolution. However, the NSW Farmers Association has argued that dispute resolution costs should be directly charged to the user with the dispute, rather than spread across all users with meters. In relation to disputes about the accuracy of meters, we agree with this position, particularly as disputes are likely to be rare relative to the total number of users with meters.

As such, we have made a draft decision to set a charge for a refundable deposit, to be lodged with a dispute claim about meter accuracy, equivalent to the meter testing cost. Under this approach (which was noted in the Nayar Consulting report), if assessment shows the meter is within agreed standards, the user's deposit will be forfeited and the reading will stand. However, if the meter is not within the agreed standard, the deposit will be refunded, and previous readings will be adjusted. The installer/owner of the meter (ie, government or user) will be responsible for the maintenance/repair of faulty meters.

The $17 included in NOW's proposed meter service charges, assumes that all users with a meter pay this $17 contribution to NOW's dispute resolution costs, even though only a fraction of users are likely to have a dispute. Therefore, if only users with a dispute were to pay a dispute resolution fee, then $17 per dispute would be too low and not cost reflective.

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[106] The 2010 State Water Determination covers the costs of meters on the regulated water source. The NOW component of the meter reading costs for regulated rivers are included in the State Water charges. Therefore, to avoid double counting, the meter reading charge for user owned meters applies to only the unregulated and groundwater sources (which are the sole responsibility of NOW).

We consider that the Nayar consulting estimates of the costs associated with the validation of a relocated meter (discussed below) represent the best available information on the likely costs of resolving disputes about the accuracy of meter readings. At the next determination, the level of costs to cover disputes related to the accuracy of meter readings can be revisited when more information about the actual costs is available. Therefore, our decision is that the refundable deposit should be:

- $105 per meter for mechanical meters
- $195 per meter for electromagnetic meters
- $195 per meter for channel meters with mobile phone or satellite telemetry coverage.[107]

Charges for validation of a relocated meter

NOW has proposed a fee of $306 per meter for the validation of a relocated meter. To derive this fee, NOW took a cost estimate that included both validation and meter maintenance costs, and then reduced this combined cost by 15% to remove meter maintenance costs. NOW sourced the combined cost of 'validation and planned maintenance' from the Nayar Consulting report, which assumed that validation and meter maintenance would occur at the same time.[108]

However, we consider that maintenance is likely to account for more than 50% of the combined costs of meter maintenance and validation, and therefore a reduction of 15% is insufficient. We have derived our validation charges by assuming the same hourly rate and distance travelled per meter as Nayar's combined 'validation and planned maintenance' cost but, relative to this combined cost, we have reduced the time required by 50%. That is:

- mechanical meters: (1hr × 1 person × $90/hr + 10 km × $1.50/km) = $105 per meter visit
- electromagnetic meters: (2hr × 1 person × $90/hr + 10 km × $1.50/km) = $195 per meter visit.
- channel meters with mobile phone or satellite telemetry coverage meters: (2hr × 1 person × $90/hr + 10 km × $1.50/km) = $195 per meter visit.[109]

We consider these validation charges to be reasonable and cost reflective.

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[107] In the 2010 State Water Determination, IPART decided to set charges for channel meters (mobile phone or satellite telemetry coverage) based on the costs of the electromagnetic meter with data logger and satellite data modem. To ensure consistency, we have applied the equivalent costs of the electromagnetic meter with data logger and satellite data modem to channel meters.

[108] See Nayar Consulting, *Assessment of Annual Operation and Maintenance Costs for the NSW (Hawkesbury Nepean and NSW Murray-Darling Basin) Metering Scheme*, September 2009, which is available on IPART's website under submissions received, 18 October 2010.

[109] In the 2010 State Water Determination, IPART decided to set charges for channel meters (mobile phone or satellite telemetry coverage) based on the costs of the electromagnetic meter with data logger and satellite data modem. To ensure consistency, we have applied the equivalent costs of the electromagnetic meter with data logger and satellite data modem to channel meters.

As mentioned above, stakeholders have argued that charging for the validation of a relocated meter is not reasonable if meters/pumps were moved to avoid damage as a result of floods. However, we note that NOW has said that meters will be installed at locations where the risk of flood damage is minimal. Further, it has indicated that if such damage were to occur as a result of flooding, costs associated with replacing and/or validating the meter would be met by NOW. NOW has provided information to IPART stating that it does not intend to charge approval holders a meter revalidation fee where such meters are removed because of flood inundation.[110] IPART recommends that NOW formalise this procedure.

10.5 NOW's proposal to exempt Hawkesbury-Nepean River users from meter service charges until 1 July 2013

As mentioned in Section 10.2 above, NOW proposed not to levy meter service charges on users in the Hawkesbury-Nepean River before 1 July 2013. In making our draft determination, we did not distinguish between users in the Hawkesbury-Nepean and users elsewhere. That is, we have set the meter service charges to be applied to **all** approval holders for the financial year following the meter's installation or from the start of the Determination where a meter is already in place. This reflects our view that NOW should be recovering its efficient costs from the impactor.

However, we recognise that a decision to waive charges, or charge less than the maximum price (as determined by IPART), is a matter for NOW and the Treasurer.

[110] Correspondence received from NOW, 15 July 2010.

11 Consent transaction charges

Consent transaction charges are intended to recover the efficient costs that NOW incurs in processing these transactions. In setting the charges, we apply the impactor pays principle. We consider that the full incremental cost of consent transactions should be recovered from users as:

- there is a clear link between the application for a consent transaction and the costs incurred – so the impactor should pay those costs
- there is an economic benefit to users to have licences and the ability to be able to complete transactions with these licences separate to the land title, and
- it ensures that NOW does not under-recover the costs of consent transactions and that users pay the full incremental costs associated with their activities.

The remaining, overhead costs are recovered through periodic water management charges. This is because the consent transaction charge recovers the additional costs that NOW incurs in responding to the application, consistent with the impactor pays principle. The fixed overhead costs, such as office rental, are incurred regardless of the number of transactions processed and hence are recovered from all users.

To set prices to recover the full incremental costs, we must calculate the efficient incremental costs associated with processing each type of consent transaction and the forecast number of each type of transaction. The section below summarises our draft decisions. The subsequent sections provide an overview of consent transactions and the costs of processing them, and then discuss our considerations and findings in making these decisions.

11.1 Summary of draft decisions on consent transaction charges

Draft decisions

20 IPART's draft decision is to set consent transaction charges as listed in Table 11.1 and Table 11.2.

These cost components are in line with NOW's proposed components, except for 2 minor adjustments to the hours to complete advertising tasks and the assumed wage rate applied to all labour hours in estimating the charges. In general, the charge for each type of consent transaction is derived by summing the individual cost components relevant to that type.

For special assessments, the charge varies based on the size/type of the consent transaction. Table 11.3 shows the typical bill and cost components for each type of consent transaction. The Table includes indicative bills for special assessment, assuming an average pump size of 265 litres/second, average irrigated land area of 154 hectares and average entitlements of 47 ML

Table 11.1 Administration fees and charges for licence transactions ($2009/10)

Type of licence transaction	Basic Charge ($)	Special assessment charge: $ per unit share of Entitlement for over 20 units up to a maximum of 120 units
New water access licence		
Zero Share	242.33	
Specific Purpose	518.60	25.08
New Licences (eg floodplain, GAB, estuarine)	518.60	25.08
Water access licence dealing		
Dealings - regulated rivers	352.84	
Dealings - unregulated rivers and groundwater	684.37	25.08
Water allocation assignments (temporary trades)		
Unregulated rivers and groundwater	218.36	
Approval extensions		
Lodged before expiry date	145.40	
Lodged after expiry date	242.33	
Basic rights work approval	218.09	

Note: Values in Table have been adjusted from $2010/11 to $2009/10 by multiplying the $2010/11 values by a factor of 0.9704 (ie, 1/1.0305).

Table 11.2 Administration fees and charges for works and use approvals ($2009/10)

Components of charge for a standard assessment	Charge ($)
(a) Basic Assessment	552.55
(b) Administration Labour (if applicable)	242.33
(c) Advertising Labour (if applicable)	65.19
(d) Advertising Media (if applicable)	300
Maximum charge (if all components included)	1,160.06
Additional charges for special assessment	
$ per L/second over 50 L/second to a maximum of 315 L/second	10.66
$ per hectare above 10 hectares to a maximum of 210 hectares	21.95
Assessment for dams	627.04

Note: Values in Table have been adjusted from $2010/11 to $2009/10 by multiplying the $2010/11 values by a factor of 0.9704 (ie, 1/1.0305).

Table 11.3 IPART's estimated Typical Bills for Licence Transactions ($2009/10)

	Typical Bill	Admin Labour	Advertising Labour	Advertising Media	Basic Assessment Labour	Special Assessment Labour
New water access licences						
Zero Share	242.33	242.33	No Charge	No Charge	No Charge	No Charge
Specific Purpose	518.60	242.33	No Charge	No Charge	276.27	Approximately only 12% of applications will require special assessment
New Licences (eg floodplain, GAB, estuarine)	518.60	242.33			276.27	Approximately only 12% of applications will require special assessment
Water access licence dealings						
Dealings - regulated rivers	352.84	242.33	No Charge	No Charge	110.51	No Charge
Dealings - unregulated rivers and groundwater	1,361.56	242.33	No Charge	No Charge	442.04	677.20
Water Allocation Assignments (temp trade)						
Unregulated rivers and groundwater	218.36	102.03	No Charge	No Charge	116.33	No Charge
New or amended approvals						
Works only (No Dam , Pump ≤ 50 Litres/sec)	1,160.06	242.33	65.19	300.00	552.55	No Charge
Works only (No Dam , Pump > 50 Litres/sec)	3,451.88	242.33	65.19	300.00	552.55	2,291.82
Works only (Dam)	1,787.10	242.33	65.19	300.00	552.55	627.04
Works only Dam & Pump > 50 Litres/sec	4,078.92	242.33	65.19	300.00	552.55	2,918.86
Use Only ≤ 10 ha	1,160.06	242.33	65.19	300.00	552.55	No Charge
Use Only > 25 ha	4,320.33	242.33	65.19	300.00	552.55	3,160.27
Works and use	7,239.19	242.33	65.19	300.00	552.55	6,079.12
Basic rights approval	218.09	218.09	No Charge	No Charge	No Charge	No Charge
Approval extensions						
Extension lodged before expiry date	145.40	145.40	No Charge	No Charge	No Charge	No Charge
Extension lodged after expiry date	242.33	242.33	No Charge	No Charge	No Charge	No Charge

Note 1: In the above table bills have been calculated based on average Pump =265L/s, average use = 154ha, average entitlements =47

Note: Values in table have been converted from $2010/11 to $2009/10 by multiplying by a factor of (1/1.0305=0.9704).

11.2 Overview of consent transactions and the costs involved in processing them

NOW is responsible for processing 4 types of consent transactions: new water access licences, water access licence dealings, new or amended approvals, and approval extensions, each of which has several sub-types. Table 11.4 provides a brief description of these transactions, and Appendix N discusses them in more detail.

Table 11.4 Description of the types of consent transactions

Type of transaction	Description of transaction
New water access licences	
Zero shares Specific purpose New water access licenses types granted by the Minister	Entitles holder to specified shares in available water, including conditions on access to this water
Water access licence dealings	
Permanent Temporary	Includes trading of water and any changes to water access licence register
New or amended approvals	
Works	Water use approval entitles use of water for particular purpose and location
Use	
Basic Rights	Water supply works approval authorises works such as pump, dam or bore for various purposes
Approval extensions	
Before expiry After expiry	Extension of approval beyond the currency of the approval (10 years)

Note: For detailed description of these transaction see Appendix N.

Source: Correspondence received from NOW.

11.2.1 The costs of processing consent transactions

The total cost of processing consent transactions is driven by:

- the number of labour hours to complete the consent transaction, which is a function of the complexity of the process and matters that NOW needs to consider when determining consents under various pieces of legislation (eg, the *Water Management Act 2000*)
- the relevant average wage rate for the labour hours involved in completing the consent transaction

- the actual costs NOW incurs when the legislative process requires placement of advertising in the media, such as the cost of placing an advertisement in a local newspaper.

Table 11.5 outlines the 5 cost components that make up the total costs, and the activities that contribute to them.

Table 11.5 Key components of the total cost of processing consent transactions

Cost component	Description of activities involved
Administration labour	▼ Receipt of application ▼ Management and banking of fees ▼ Check application for completeness and request further information if required ▼ Prepare file ▼ Data entry and record keeping ▼ Resolve any objections by Native Title ▼ Sending correspondence – letters, conditions
Basic assessment	▼ Check water management principles ▼ Check against Water Sharing plans rules ▼ Check for embargoes or restrictions (under s71Z of Water Management Act) ▼ Check controlled allocations order ▼ Some water sharing plans require notification/consultation with local aboriginal communities
Special assessment (if required)	A special assessment is triggered under various circumstances such as whether or not the activity is likely to cause minimal harm to the environment. NOW follows a step by step flow chart process to determine whether a special assessment is required. Matters which need to be considered are specified in various pieces of legislation. Key activities involved include: ▼ Must complete environmental impact assessments where there are identified: – Threatened species, habitat – Critical areas where water quality declines, or detrimental groundwater declines ▼ Detailed site inspection ▼ Analysis of flow data, detailed modelling ▼ Hydrological studies by a Hydrologist, or other specific studies by an ecologist or other specialist ▼ Objections/mediation ▼ Attending planning focus meetings ▼ Detailed consultation with adjoining water users (where impacts may occur)
Advertising labour	▼ Labour hours associated with completing media advertisements for papers etc

Cost component	Description of activities involved
Advertising media	▼ Where the legislation specifies that advertisements need to be listed in aboriginal and local newspapers ▼ Fees charged for the advertisements in different media

Source: Correspondence received from NOW

11.2.2 Additional costs of special assessments

Some consent transactions require more than a basic assessment. These are known as special assessments, and they involve additional costs due to the additional time involved in processing them. Whether or not a consent transaction is a special assessment is determined by NOW, in line with legislative requirements. These requirements reflect the size and type of the transaction, including the potential impact on third parties as a consequence of the transaction. If a special assessment is required, then the cost of the transaction increases where:

- the entitlement is greater than 20 units
- the pump size is greater than 50 litres/ second, or
- land area greater than 10 hectares.

In each case, the cost component is expressed as dollars per unit (eg, $ per entitlement unit, $ per litre/second or $ per hectare) above the basic assessment.

Dams also require a special assessment, and the cost component is the average hours to assess the application multiplied by the wage rate applicable to the staff member who conducted the assessment.

11.3 NOW's proposal on consent transaction charges

NOW proposed significant increases in consent transaction charges over the 2011 Determination period, on the basis that that these charges have significantly under recovered costs over the 2006 Determination period.

For the 2006 Determination, we set consent transaction charges to recover $2.8m ($2006/07) per year. These prices were based on NOW's estimate of the time it would take to complete the various consent transactions. NOW has since identified that the forecasts it provided significantly underestimated the number of hours that it took to complete the various consent transactions. As a result, it has significantly under-recovered the costs it incurred in processing consent transactions over the 2006 Determination period, as shown in Table 11.6.

Table 11.6 NOW's reported costs and revenues for consent transactions over the 2006 Determination period ($2009/10)

Financial Year Ending 30 June	2007	2008	2009	2010 (budget)	Total
Incremental costs Incurred	4.7	6.7	7.1	5.8	24.3
Revenue received	2.0	2.8	2.0	2.4	9.2
Shortfall	-2.7	-3.9	-5.1	-3.4	-15.1

Source: NOW submission to 2010 price review, p 82.

11.3.1 Key drivers of NOW's increased cost to complete consent transactions

NOW's forecasts costs have increased due to:

- Improved estimates of labour hours based on actual experience of the time necessary to process transactions, given the complexity of assessing consent transactions (specified in legislation). In some instances, these estimates have doubled compared to those used for the 2006 Determination.
- A legal obligation to consider the impacts of consent transactions under a number of statutes.[111] The *Water Management Act 2000* and the *Environmental Planning and Assessment Act 1979* are the most important drivers of NOW's assessment processes and consequently the costs of processing consent transactions.

In general, a consent transaction will only be granted when the Minister is satisfied that there are adequate arrangements in place to ensure that 'minimal harm' will be done. This includes minimal harm to any water source or its dependent ecosystems as a consequence of water being taken from the water source (or proposed use of water on the land) under the licence (or works/use approval). Such assessments require detailed examination by the appropriate experts, which increases the time NOW takes to complete such assessments and make decisions.

11.3.2 NOW's proposed approach to setting consent transaction charges

NOW has applied its experience under the *Water Management Act 2000* and used actual hours incurred in transaction processing (rather than an estimate) as the basis for formulating its consent transaction charges.

NOW has modelled its proposed consent transaction charges based on the actual amount of hours taken to complete the transaction over the period 2007/08 to 2008/09. To do this, all NOW's staff who worked on consent transactions recorded the hours they spent on consent transaction services separately to other work functions.[112] This included all work on *Water Act 1912* and *Water Management Act 2000* functions. However, the hours incurred were not recorded to a particular

[111] See Table N.1 in appendix N for a description of the key pieces of legislation.

[112] This was undertaken for a period of more than 12 months during the current (2006) Determination.

transaction type. As a result, NOW has had to allocate these hours to the various component functions for the transaction types based on the managers' experience. These are shown in Table 11.7.

To forecast the revenue required to complete consent transactions, NOW has multiplied its estimate of the number of transactions to be completed (shown on Table 11.9) by the unit costs of completing the transactions (shown in Table 11.8). NOW has proposed reducing consent transaction staff numbers from 67 to 52 FTEs and then maintaining staff numbers at 52 FTEs at a cost of $5.8m ($2009/10) over the 2011 Determination period.[113] This equates to a reduction of $1.3m a year over the period.

NOW also applied an efficiency factor of 21.4% to these estimated hours (for each transaction type and cost component), based on actual 2007/08 and 2008/09 hours recorded.[114] NOW then estimated the costs of completing the transactions by multiplying the standard hourly rate of $61 per hour (excluding overheads) by the number of hours incurred (shown in Table 11.7). This was done for the different cost components of administration, advertising, basic assessment and special assessments for the 4 main types of consent transactions. The estimated unit cost per transaction type is shown in Table 11.8.

NOW advises that all *Water Act 1912* licences will be transferred to *Water Management Act 2000* in 2010/11. The equivalent charges for *Water Act 1912* licence consent transactions (currently set by the Minister)[115] are lower than the prices proposed in its 2010 submission. If NOW does not transfer all the *Water Act 1912* licences to *Water Management Act 2000* licences then it will suffer a revenue shortfall which the NSW Government will have to pick up. There is no risk to customers.

[113] NOW submission to 2010 price review p 82.

[114] The efficiency target is even higher for 2007/08 to 2010/11 being 25.6%.

[115] The Minister wrote to IPART on 30 March 2006 saying that IPART need not set licence transaction charges for *Water Act 1912* transactions because all *Water Act 1912* charges would be converted to *Water Management Act 2000* licences within 12 months of that date.

Table 11.7 NOW's estimated hours per transaction for forecast regulatory period

				Special Assessments			
	Administration Labour	Advertising Labour	Basic Assessment	$ per unit entitlement > 20 Unit Entitlements	$L/s for pumps > 50 L/s capacity	$ per Ha > 10 Hectares	Dams
New water access licences							
Zero Share	4.75						
Specific Purpose	4.75		4.75	0.38			
New licences (eg floodplain, GAB, estuarine)	4.75		4.75	0.38			
Water access licence dealings							
Dealings - regulated rivers	4.75		1.90				
Dealings - unregulated rivers and groundwater	4.75		7.60	0.38			
New or amended approvals							
Works only	4.75	2.85	9.50		0.16		9.50
Use only	4.75	2.85	9.50			0.33	
Works and use	4.75	2.85	9.50		0.16	0.33	9.50
Basic rights work approval	4.28						
Approval extensions							
Extension	3.80						

Source: NOW's Transaction charges model.

Table 11.8 NOW's proposed unit costs per transaction ($2009/10)

				Special Assessments			
	Administration Labour	Advertising Labour	Basic Assessment	$ per unit entitlement > 20 Unit Entitlements	$L/s for pumps > 50 L/s capacity	$ per Ha > 10 Hectares	Dams
New water access licences							
Zero Share	292.60						
Specific Purpose	292.60		292.60	23.41			
Other	292.60		292.60	23.41			
Water access licence dealings							
Dealings - regulated rivers	292.60		117.04				
Dealings - unregulated rivers and groundwater	292.60		468.16	23.41			
New or amended approvals							
Works only	292.60	475.56	585.20		9.95		585.20
Use only	292.60	475.56	585.20			20.48	
Works and use	292.60	475.56	585.20		9.95	20.48	585.20
Basic rights work approval	263.34		0.00				
Approval extensions							
Extension	234.08		0.00				

Note: The costs per unit is the estimated average hours in Table 11.7 by the assumed cost of labour of $61 per hour.

Source: NOW's transaction charges mode.

Table 11.9 NOW's forecast transaction numbers

				Special Assessments			
	Administration Labour	Advertising Labour	Basic Assessment	$ per unit entitlement > 20 Unit Entitlements	$L/s for pumps > 50 L/s capacity	$ per Ha > 10 Hectares	Dams
New water access licences							
Zero Share	433						
Specific Purpose	200		200	24			
Other	50		50	6			
Water access licence dealings							
Dealings - regulated rivers	400		400				
Dealings - unregulated rivers and groundwater	460		460	368			
New or amended approvals							
Works only	613	613	613		129		98
Use only	104	104	104			38	
Works and use	443	443	443		93	164	71
Basic rights work approval	4,185		4,185				
Approval extensions							
Extension	3,300						
Total forecast transactions	10,188	1,160	6,455	398	222	202	169

Source: NOW's Transaction Consent Charges Model.

11.3.3 NOW's proposal to introduce 2 additional new sub-types of consent transaction

NOW's proposal incorporates 2 new sub-types or categories within the main types of consent transactions:

1. New water access licences granted by the Minister (within the New Water Access Licences type of consent transaction), and
2. Approval extensions after the expiry date (within the Approval extensions type).

1. New water access licences granted by the Minister

In its original submission, NOW included and costed a new category of New Water Access Licences identified as 'other' in its original submission (as shown in Table 11.8 and Table 11.9). However, after discussions with us, NOW advised that it wished to amend its proposal to more clearly define the licenses that could fall within that category. These licences include Flood Plain harvesting, Adaptive environmental conditions, Harvesting tidal pools, and Great Artesian Basin conveyance, and are described in Table 11.10.

The new licence types are granted by the Minister from time to time, to authorise the extraction of water from new or existing sources over a specified period.

Table 11.10 New water access licences granted by the Minister

Licence type	Description
Flood Plain Harvesting	Harvesting water during floods using licensed structures such as levees, dams or channels. The policy for this activity is currently on public display.
Adaptive environmental conditions	These are environmental licences which are created through the direct purchase of existing licensed entitlements or through water infrastructure projects that provide water savings.
Harvesting tidal pools	Currently there are a significant number of irrigators who harvest water from tidal pools at low tide when there is a strong flow of fresh water from the river to the estuary. These water sources are included in a number of water sharing plans. It is intended that this activity will require a licence under the *Water Management Act 2000*.
Great Artesian Basin Conveyance	The Commonwealth Government is providing subsidies for stock and domestic licence holders to plumb water from bores to final use rather than using open dirt channels. NOW expects that the Minister will require stock and domestic holders to hold a conveyance licence for water losses due to evaporation and transportation if they fail to plumb their bore water.

2. Approval extensions after the expiry date

New or amended works and use approvals are granted for a period of 10 years. To extend the approval beyond the 10 years, the licence holder must renew the approval. If the licence holder lodges their renewal application before the expiry date, the application process is reasonably straight-forward and imposes minimal costs on NOW. If the licence holder lodges their renewal application after the expiry date, the application process is more complex because the licence holder must apply for a new approval rather than a simple renewal of an existing approval. This imposes additional requirements on NOW (such as the need to obtain statutory declarations from the licence holder), which imposes significant administrative costs.

NOW's 2009 submission proposed a significant increase in the single charge for an approval extension to account for the fact that a significant number of applications are received after the expiry date and impose additional costs on NOW. Following our discussions with NOW regarding this proposal, NOW has advised us that around 50% of licence holders fail to lodge their application renewals before the expiry date. Therefore, to be more cost reflective, NOW revised its approach and suggested that there should be 2 separate charges for approval extensions depending on whether the application was received before or after the expiry date.

11.3.4 NOW's proposed consent transaction fees

Based on NOW's forecast of the number of expected transactions, NOW proposed the prices for the consent transactions shown on Table 11.11. Table 11.12 shows typical bills under NOW's proposed prices.

Table 11.11 NOW's proposed consent transaction charges ($2009/10)

Type of Transaction	Administration and basic assessment	Additional advertising fee	Additional special assessment fees
New water access licences			
Zero share	$292.60		
Specific purpose	$585.20		$23.41 per ML or units over 20, to a maximum of $2,340.80
Other	$585.20		$23.41 per ML or units over 20, to a maximum of $2,340.80
Water access licence dealings			
Permanent dealings – regulated rivers	$409.64		
Temporary dealings – unregulated rivers and groundwater	$760.76		
Permanent dealings – unregulated rivers and groundwater	$760.76		$23.41 per ML or units over 20, to a maximum of $2,340.80
New or amended approvals			
Works only	$877.80	$475.56	$9.95 per L/s of pump capacity over 50, to a maximum of $2,636.33 + $585.20 per dam
Use only	$877.80	$475.56	$20.48 per ha over 10, to a maximum of $4,096.40
Works and use	$877.8	$475.56	$20.48 per ha over 10, to a maximum of $4,096.40, + $9.95 per L/s of pump capacity over 50, to a maximum of $2,636.33 + $585.20 per dam
Basic rights work approval	$263.34		
Approval extensions			
Before expiry	$175.56		
After expiry	$234.08		

Note: Approval extensions have been updated based on the information we have received in the course of discussions with NOW during the review process.

Source: NSW Office of Water submission to the 2010 Review of Bulk Water Prices, p 85.

Table 11.12 Typical bills based on NOW's proposed prices ($2009/10)

Transaction type	Current fees	Proposed fees	% Increase
New water access licences			
Zero share licence	$116.68	$292.60	151%
Specific purpose licence 20 ML	$487.37	$585.20	20%
Other licence 50 ML	$999.17	$1,287.44	29%
Water access licence dealings			
Groundwater Dealing 20 ML	$487.37	$760.76	56%
Groundwater Dealing 100 ML	$1,852.17	$2,633.40	42%
New or amended approval			
Works only			
100 mm pump (19 L/s)	$1,018.13	$1,353.36	33%
150 mm pump (60 L/s)	$1,047.13	$1,452.84	39%
300 mm pump (265 L/s)	$1,641.63	$3,492.27	113%
Use only			
10 ha	$1,018.13	$1,353.36	33%
40 ha	$1,283.03	$1,967.82	53%
100 ha	$1,812.83	$3,196.74	76%
farm dam	$1,470.25	$1,938.56	32%
Works and use			
100 mm pump + 10 ha	$1,018.13	$1,353.36	33%
150 mm pump + 40 ha	$1,312.03	$2,067.30	58%
300 mm pump + 100 ha	$2,436.33	$5,335.65	119%
BLR bore	$116.68	$263.34	126%
Production bore	$1,018.13	$1,353.36	33%
Approval extensions			
Before expiry	$116.68	$175.56	50%
After expiry	$116.68	$292.60	151%

Note: Approval extensions have been updated based on the information we have received in the course of discussions with NOW during the review process**.**

Source: NSW Office of Water submission to 2010 Review of Bulk Water Prices, p 86.

11.4 PwC's analysis of NOW's proposed consent transaction charges

As part of the detailed analysis of selected activities it undertook for its review of NOW's expenditure, PwC examined NOW's proposal for consent transaction charges. It noted that NOW's forecast costs for consent transactions do not change over the determination period, and found that efficiencies should be incorporated into these estimates. Based on its experience, PwC found that NOW has scope for efficiency gains from:

- improvements in on-line lodgement of applications
- information system upgrades
- improvements to registers
- staff training
- improvements and familiarity with new processes.

Therefore, it recommended that a 0.5% per annum efficiency reduction be applied to NOW's proposed consent transaction expenditures (Table 11.13).

Table 11.13 PwC's recommendation on NOW's efficient costs in processing consent transactions ($2009/10, '000s)

	2010/11	2011/12	2012/13	2013/14
NOW proposal	5,762	5,762	5,762	5,762
0.5% efficiency reduction	-29	-57	-86	-114
PWC recommended revenue	5,733	5,704	5,676	5,647

Source: PwC Review of NOW water management expenditure p 16.

11.5 Stakeholder views on NOW's proposed increases to consent transaction charges

Most stakeholders strongly objected to NOW's proposed increases to consent transaction charges based on the view that NOW is largely inefficient in processing consent transactions. They put the view that the excessive time taken to process transactions is an indicator that NOW is not efficient, and that only the efficient costs of completing consent transactions should be included in consent transaction charges. For example, the Coastal Valleys Customer Service Committee[116] stated that NOW charges $760.76 for a temporary transfer, while State Water charges $50 plus $0.50 per mega litre to a maximum of $150. However, we note that this discrepancy is caused by the fact that NOW undertakes the assessment on behalf of State Water but in the past NOW has not charged State Water for this service.

[116] Coastal Valleys Customer Service Committee, 16 June 2010, submission to IPART, p 2.

In addition, while some stakeholders recognised that NOW has made some progress in reducing costs per transaction, they argued that it is still too high and efficiency gains still need to be made. High Security Irrigators Murrumbidgee[117] submitted that PwC's recommended efficient target of 0.5% is not high enough, given that NOW has 52 FTEs. However, we note that NOW's approach to setting the consent transaction charges has assumed an efficiency factor of 21.4%. We consider this to be an ambitious target and no further reductions including the 0.5% efficiency recommendation by PwC are necessary.

Similarly, Gwydir Valley Irrigators Association[118] suggested that some of the requirements of the application process need to be reviewed to reduce administration costs, including:

- information requirements of licence applications
- advertising requirements, as the processes appear to be overly burdensome for the government and the applicant
- third-party objections, where in many cases the objections are not only vexatious in nature but lead to very resource hungry resolutions.

We note that it is the third party impact analysis and the need to minimise harm on the environment that drives NOW's analysis, rather than the basic administrative tasks as outlined by Gwydir Valley Irrigators Association.

In contrast, Western Murray Irrigation's submission[119] supported an increase in transactions fees to ensure full cost recovery and the retention of adequate resources to facilitate the completion of transactions within reasonable time frames. It also indicated that the proposed charges may still be inadequate (eg, for basic rights approvals).

Other stakeholders raised some specific issues in relation to the proposed consent transaction charges. For example, NSW Irrigators Council, Murrumbidgee Irrigation and Gwydir Valley Irrigators Association argued that the overhead costs related to transactions should be recovered from transaction fees, and not included within NOW's general cost base and recovered through water charges. They considered that the exclusion of overhead costs in the calculation of the costs of water consent transactions is a cross-subsidy from water users to water traders.

We note that IPART has a well-established approach for recovering only the incremental cost of non-standard services such as consent transaction fees and miscellaneous charges. This approach is consistent with the approach applied in the 2006 Determination and equivalent charges (miscellaneous charges) in the metropolitan water price determinations. Only recovering the incremental costs

[117] High Security Irrigators Murrumbidgee, 15 June 2010, submission to IPART, p 5.
[118] Gwydir Valley Irrigators Association, 18 June 2010, submission to IPART, pp 37-39.
[119] Western Murray Irrigation, 23 June 2010, submission to IPART, p 2.

related to the consent transaction charges ensures that these charges do not subsidise service and usage charges.

Stakeholders generally accepted the sliding scale fee structure, but Gwydir Valley Irrigators Association questioned whether the current scale reflects greater effort in the consent transaction process. For example, it doesn't believe that there is a difference between a 300mm and 100mm pump, and that this issue should be reviewed. We note that in response, NOW indicated that the larger the pump size, the higher the likely impact on the environment and other third parties, and therefore the pump size differential used in the sliding scale is reasonable.

Stakeholders also generally supported NOW's proposed introduction of the 4 'new water access licence granted by the Minister' category of consent transaction, on the proviso that there are no cross-subsidies in the transaction charges across different valleys (ie, tidal pool licences and Great Artesian Bore conveyance licences). However, some stakeholders raised concerns:

- Gwydir Valley Irrigators Association disagreed with fees being applied to the initial issuing of floodplain harvesting, Great Artesian Bore conveyances, and tidal pool licences, as these are all processes connected with the move from the *Water Act 1912* to the *Water Management Act 2000*, and, therefore, should not result in an extra cost to users. We consider that the charges should be applied the same way as any other licence category based on the impactor pays principle and that no special exception should be given due to the move to the *Water Management Act 2000*.
- Some stakeholders argued that it was premature to consider fees in relation to a floodplain harvesting licence because the services and efficiencies that NOW will provide are unknown at this stage. They also stated that these licences are not expected to be issued within the 2011 Determination period. Further, NSW Irrigators Council and Gwydir Valley Irrigators Association identified that the NSW Government has received Commonwealth funding for issuing floodplain harvesting licences and access approvals. On that basis, it argued that there is no justification for applying an additional charge to recover what it perceives are the same costs. We note that the initial funding was intended to cover the set up costs involved in issuing of floodplain harvesting licences, and the consent transactions fees relate to processing the individual applications themselves, similar to all other consent transaction fees.

We have considered these arguments in reviewing NOW's proposal and in making our decisions on consent transactions discussed below.

11.6 IPART's decision on consent transaction charges

We have examined NOW's approach to completing consent transactions in detail, to not only gain an understanding of the processes involved in completing consent transactions but also to determine whether NOW efficiently undertakes this task. We have also carefully considered stakeholders' comments. We understand that the key driver of NOW's time in processing consent transactions is the legislative obligations on NOW to conduct detailed investigations and analysis (including environmental impact statements) when assessing consent transactions. We note that while this contributes to the time taken for NOW to complete transactions, NOW have been able to report efficiencies in the processing of consent transactions. For example, NOW has reduced its average processing time for licence dealings from 76 days in 2006/07 to 30 days in 2007/08.[120] Therefore, we consider the time taken to complete transactions is largely driven by legislative requirements and that NOW is generally efficient in processing consent transactions.

We consider that many of stakeholders' concerns stem from the fact that NOW has not clearly explained what is involved in completing consent transactions: without understanding the complexities involved in completing consent transactions, it can appear to the stakeholder that NOW is not efficient and that the charges are excessive. For example, in its submission, Murray Irrigation[121] noted that it has completed 554 transactions through its share entitlements registry with 2 only FTEs and that this shows that NOW needs to streamline its activities and become more efficient. However, this comparison is not valid, because large cooperatives such as Murray Irrigation do not have the same statutory obligations to investigate and analyse that NOW has, and which significantly increase its time and costs.

However, where stakeholders have a better understanding of the tasks involved in completing consent transactions then they are likely to be more accepting of the costs involved in completing consent transactions. This is evidenced by Western Murray Irrigation's submission[122] supporting an increase in transactions fees to ensure full cost recovery and the retention of adequate resources to facilitate the completion of transactions within reasonable time frames.

Overall, based on our considerations and analysis, we are satisfied that NOW's methodology is robust and consistent with our approach for the 2006 Determination. We also consider that NOW's approach is an improvement on the 2006 Determination approach, as the estimates of time taken to investigate, assess, and process consent transactions are based on actual time taken to complete the transactions rather than solely relying on estimation.

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120 National Water Commission, Australian water reform 2009, Second biennial assessment of progress in implementation of the National Water Initiative, p 147.
121 Murray Irrigation, 16 June 2010, submission to IPART, p 10.
122 Western Murray Irrigation, 23 June 2010, submission to IPART, p 2.

Regarding the efficiency factor to be applied to NOW's costs, we note that while PwC recommended a 0.5% efficiency adjustment, we consider that the 21.4% efficiency factor NOW applied to the actual 2007/08 and 2008/09 hours in calculating its proposed costs is an ambitious target and that no further efficiency adjustment is necessary.

However, we identified the following 2 minor issues in NOW's methodology that we consider require adjustments to be made. In our view:

- regarding advertising costs, NOW has over-estimated the number of hours required to place advertisements in the media
- regarding labour costs, NOW has used a standard cost of $61 per hour of work for all hours associated with consent transaction charges, which we consider to be too high.

Our adjustments and rationale for making them are explained below.

11.6.1 Adjustment to estimated hours for advertising

NOW's estimate of advertising hours per transaction in Table 11.7 shows that NOW have used 2.85 hours as the number of hours to complete the task of advertising. NOW has identified the following tasks as being included within the advertising hour's component of costs:

1. Preparation of the advertisement.
2. Placement of the advertisement.
3. Checking accuracy.
4. Payment of invoices.
5. Filing.
6. Receipt of objections.
7. Responding to enquiries.

We consider the first 3 components as costs related to advertising, while the remaining tasks we consider to be administration tasks included within the separate administration cost component. For this reason, NOW's estimate of 2.85 hours to complete the advertising task is considered to be too high and thus not cost reflective. Following discussions with NOW about this discrepancy, NOW has agreed that the administration component should be attributed to the appropriate category and not advertising and on this basis submitted revised hours for the completion of this task.

NOW reduced the estimated hours for advertising from 2.85 to 1.5, and we consider this estimate to be more cost reflective and thus reasonable. See Appendix N.

11.6.2 Average unit cost of labour hours processing transactions is too high

NOW has assumed a single rate of $61 per hour as the cost for every hour used to estimate the costs of completing consent transactions. This equates to an average Clerk Grade 12 completing all tasks associated with completing transactions, including administration and basic assessments. We do not consider this to be reasonable or cost reflective.

We consider that it is more appropriate to use the average wage rate applicable to the staff grade that is completing the various consent transaction tasks, rather than assume the maximum wage rate for all staff hours worked.

Following discussion with NOW, they have advised us of the following:

- job classifications of the staff that would normally carry out the various consent transaction functions
- over the course of the 2006 Determination, multi-skilling had allowed staff at different grades to complete the different functions.

Based on this information, we used the mid-point of the salary scales applicable for each function and applied the Crown Employee's Award Rates that apply from 1 July 2010.[123] To build up the costs we used a yearly hourly rate of 1826.6 hours, and then applied a factor of 26.60% for on-costs (eg, superannuation, long service leave, payroll tax and workers compensation). The resulting revenue required using the above salary rates results in total revenue of $5.1 million per year over the 2011 Determination. Table 11.14 summarises NOW's proposal, PwC's recommended efficiency adjustment and revenue required, and our draft finding on the revenue required for completing consent transactions.

Table 11.14 NOW proposed, PwC recommended and IPART draft finding on the revenue required for consent transactions ($2009/10 '000s)

	2009/10	2010/11	2011/12	2012/13	2013/14
NOW's proposal	5,762	5,762	5,762	5,762	5,762
PwC's recommended 0.5% efficiency dividend	0	-29	-57	-86	-114
PwC recommended revenue	5,762	5,733	5,704	5,676	5,647
IPART draft finding	5,237	5,237	5,237	5,237	5,237

Source: PWC Review of NOW water management expenditure, p13.

[123] See Appendix N for the applicable salary scales and our assumptions.

12 Impacts of pricing decisions

Before finalising our draft pricing decisions, we considered the impact of the maximum prices under the draft decision on NOW and on water users. We also considered these prices in the context of each of the matters we are required to consider in making this price determination, listed in Section 15 of the IPART Act. Overall, we are satisfied that the implications of our findings for water users, economic efficiency, the environment, and the financial outcomes for NOW are appropriately balanced.

This chapter explains our assessment of the implications of this determination for NOW and water users. Appendix G lists the factors included in Section 15 of our Act and identifies where these matters have been considered in this draft report.

12.1 Implications for NOW

As outlined below, in conjunction with Government funding, we consider that this draft determination provides NOW with sufficient revenue to carry out its monopoly services effectively and efficiently.

12.1.1 The draft determination allows for an increase in NOW's efficient costs

The draft determination allows for an increase in NOW's efficient costs, including an increase in its operating expenditure and allowances for returns on and of its forecast capital expenditure that we consider prudent and efficient. This increase recognises that the work of managing the water entitlement system is becoming more complex and sophisticated, thus increasing the demands on NOW.

As discussed earlier in this report, our adjustments to NOW's proposed operating expenditure are not based on the view that NOW should cut back or curtail its planned water management activities and levels of service. Rather, they reflect our finding that there is scope for NOW to realise efficiency gains. That is, we consider that NOW should be able to deliver all its proposed water management activities, and that service levels should not be adversely affected by our decision to reduce its forecast operating expenditure.

Similarly, we intend that our decision to not allow for NOW to earn returns on or of its historic capital expenditure will provide it with a strong incentive to improve its

capital planning and asset management systems, which will ultimately enhance its performance.

12.1.2 The draft determination also allows for an increase in NOW's forecast levels of cost recovery

As well as an increase in costs, this draft determination also allows for an increase in NOW's forecast level of cost recovery, from 88% in 2009/10 to 94% by 2013/14. Actual levels of cost recovery may be lower or higher, depending on the extent to which actual water usage varies from forecast water usage. However, we note that this draft determination provides NOW with a relatively high degree of revenue certainty and stability, as approximately 80% of its forecast revenue is to come from fixed charges.

Table 12.1 NOW's forecast levels of cost recovery under the draft determination ($'000, 2009/10)

	2009/10	2011/12	2012/13	2013/14	% Change 2009/10 to 2013/14
IPART's notional user share of costs	33,079	39,377	40,841	41,840	26%
IPART's target user share of costs (via prices)	29,099	33,944	36,925	39,190	35%
NOW's forecast level of cost recovery under IPART's draft determination	88%	86%	90%	94%	

12.1.3 The NSW Government will need to fund some of NOW's monopoly water management costs

Table 12.1 shows that, while its forecast levels of cost recovery increase over the 2011 Determination period, NOW is not expected to recover the total user share of its costs over this period. This is because of our decision to impose a 20% cap on forecast annual bill increases when modelling prices, in order to help mitigate impacts on water users.

To enable NOW to carry out its water management activities effectively, the NSW Government would be required to fund the difference between NOW's 'notional' user share of costs and the revenue forecast to be received from users via water management prices (ie, the 'target user share of costs'). We note that this would be in addition to the notional Government (or community) share of NOW's total costs of carrying out its monopoly activities. Table 12.2 shows our assessment of the Government's contributions to NOW for its monopoly activities – which ranges from approximately $32.8 million in 2011/12 to $31.7 million in 2013/14.

Table 12.2 IPART's assessment of the required contribution from the NSW Government to fund NOW's monopoly services ($'000, 2009/10)

	2011/12	2012/13	2013/14
Government (community) share of NOW's total efficient costs	27,394	26,687	29,041
Difference between notional user share and target user share	5,433	3,916	2,650
Total Government contribution to the cost of NOW's monopoly activities	**32,828**	**30,603**	**31,691**

Note: The figures in this table include NOW's contributions to the MDBA. That is, the 'Government (community) share of NOW's total efficient costs' includes the government share of NOW's contributions to the MDBA, while the user share of NOW's contribution to the MDBA is included in the 'notional user share' of costs.

Note: totals may not add due to rounding.

12.2 Implications for water users

In assessing the implications for water users of our draft determination, we have considered:

- sample water bills, taking into account the distribution of entitlement volumes
- the contributions that NOW's charges make to farm costs, and
- the ability of water users to trade entitlement to mitigate the impact of higher prices.

We have not considered the implications of transaction fees and meter service and reading charges. Transaction fees are one-off, upfront charges, which will only impact on users on an 'as needs' (or per transaction) basis. On the other hand, the meter service and reading charges have the potential to significantly increase annual bills for small entitlement holders. However, we note that:

- functioning meters are an essential part of effective water resource management, and it is reasonable to expect that metering will increase and become more widespread given the value of water entitlements
- under the impactor pays principle, it is appropriate that entitlement holders pay for the efficient costs of meter maintenance, servicing and reading
- meters provide users with an opportunity to reduce their water bills, via reduced water extraction – as users with an appropriate meter in place will be subject to the two-part tariff
- NOW's supplementary submission states that licence holders with small entitlements will not be recipients of Government funded meters, and hence will not be subject to its meter service charges[124] (prior to the final determination, IPART seeks confirmation from NOW as to the minimum entitlement/licence size subject to its metering program).

[124] NOW supplementary submission, May 2010, p 1.

Our analysis, which is discussed in detail below, indicates that although the increases in NOW's water management prices are substantial in percentage terms, the absolute dollar increase in bills for many users will not be great. In addition, NOW's bills as a proportion of total farm costs are generally very small, and NOW's prices generally represent only a fraction of the value of traded water.

We acknowledge NOW's prices increase significantly under the draft determination, and that this will impact on the profitability of water users' businesses to some extent. However, we have taken all reasonable available measures to mitigate the level of price increases. This includes capping annual increases in forecast bills at 20% when modelling prices, having PwC independently asses NOW's expenditure proposal, not providing allowances for historical capital expenditure, and not allowing increases in user contributions to the MDBA, in the absence of further information. In addition, we consider that the price increases under this draft determination are necessary to enable NOW to carry out its water management activities efficiently and effectively – many of which will ultimately benefit water users, through maintenance and protection of the water entitlements system. Further, we have taken steps to help ensure that NOW is held accountable for how it expends the revenue it generates from prices over the determination period, and the outcomes it delivers (see Chapter 13).

12.2.1 Sample bills

Water users vary considerably in terms of the size of their entitlement, their capacity to trade their entitlement, and their use of water. This diversity means that there is no 'typical' customer, and that the average entitlement volume per licence is a poor representative of a typical customer.

To enable us to identify entitlement size thresholds against which the majority of licence holders can compare their bills, we have used NOW's licence database to chart the distribution of entitlement sizes for each of the 3 water types: regulated rivers, unregulated rivers, and groundwater. We have also used this database to estimate the number of licences that will be subject to the minimum bill of $95 per annum.

The sections below present our findings on entitlement volumes per licence, the number of licences that will be subject to the minimum bill, and sample bills for 'small' and 'large' water users (entitlement holders) for each water type.

Notably, our analysis also suggests that:

- 51% of licences will be subject to the minimum bill of $95 a year by 2013/14. These users face a bill increase of $35 per annum (from $60 to $95)
- Over 84% of licences will experience a bill increase of less than $100 a year by 2013/14
- Over 70% of licences face a bill that is $300 a year or less.

This suggests that the large percentage increases in prices under this draft determination are not likely to lead to large absolute increases in bills for many water users.

The distribution of entitlement volumes across water types

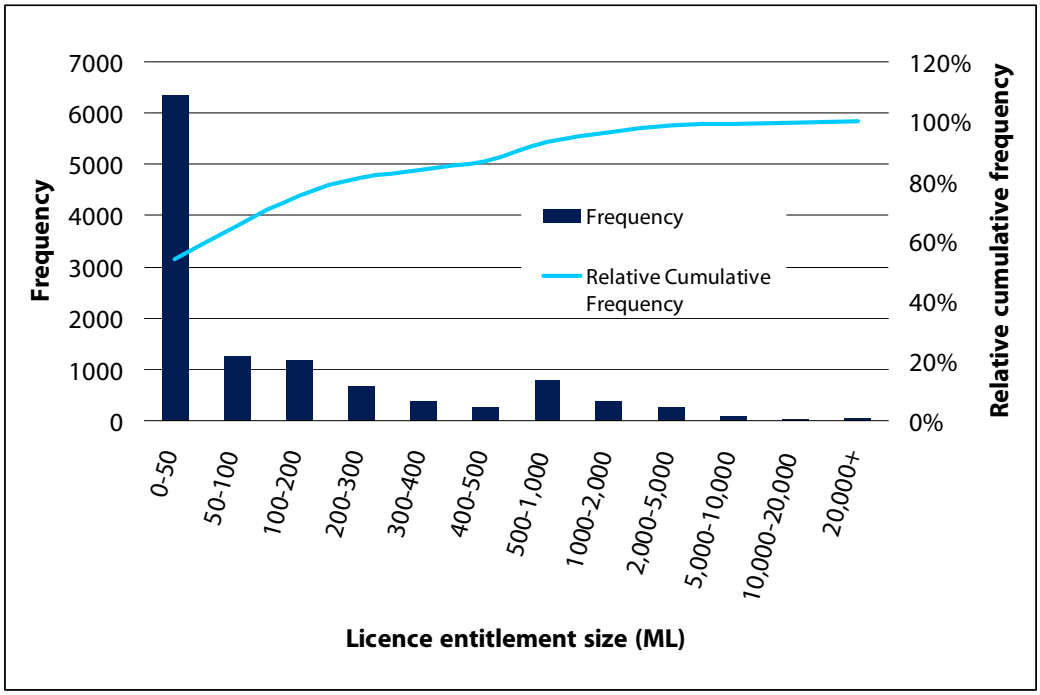
Entitlement volumes for regulated river licences

Figure 12.1 shows a histogram of entitlement sizes for regulated river licence holders. The dark blue bars represent the number of licences that fall into different ranges of entitlement sizes. The light blue line shows the relative cumulative frequency (ie, the percentage of licences that are less than a given entitlement size) with a scale marked on the right hand Y-axis.

We observe that:

- 65% of users have an entitlement of 100 ML or less
- 87% of users have an entitlement of 500 ML or less.

Figure 12.1 Distribution of entitlement per licence for regulated rivers



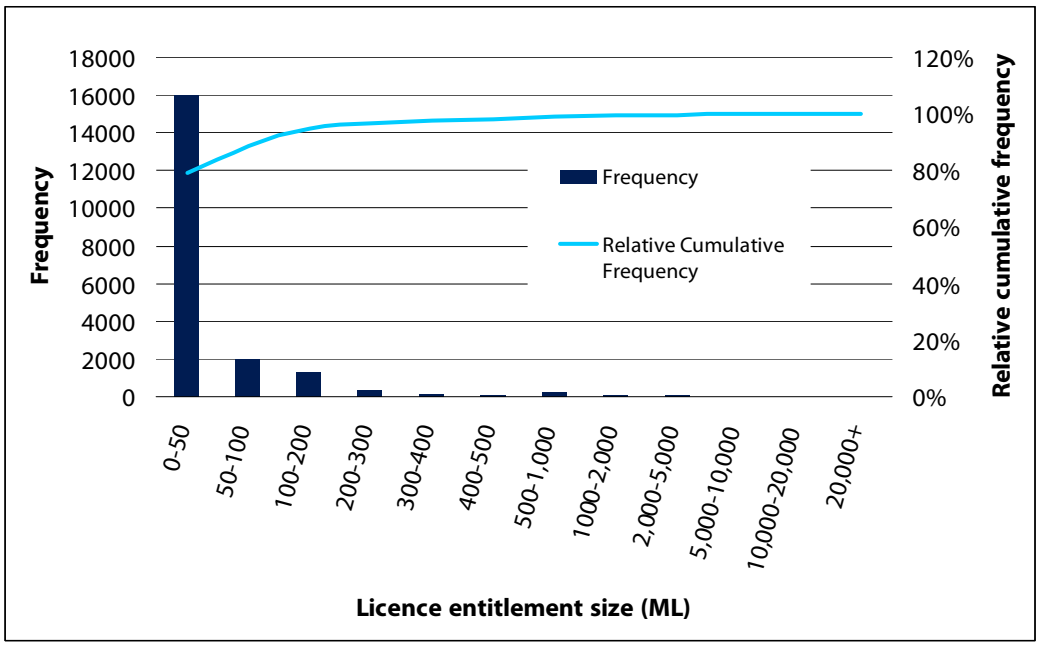
Note: Includes Water Act and Water Management Act licences, assuming 1ML= 1 unit share.
Data source: Constructed using data from NOW's internal licence database.

Entitlement volumes for unregulated river licences

Figure 12.2 shows a histogram of entitlement sizes for unregulated river licence holders. We note that:

- 89% of users have an entitlement of 100 ML or less
- 98% of users have an entitlement of 500 ML or less, and
- entitlement volumes for unregulated river licence holders are generally smaller than for regulated river customers.

Figure 12.2 Distribution of entitlement per licence on unregulated rivers



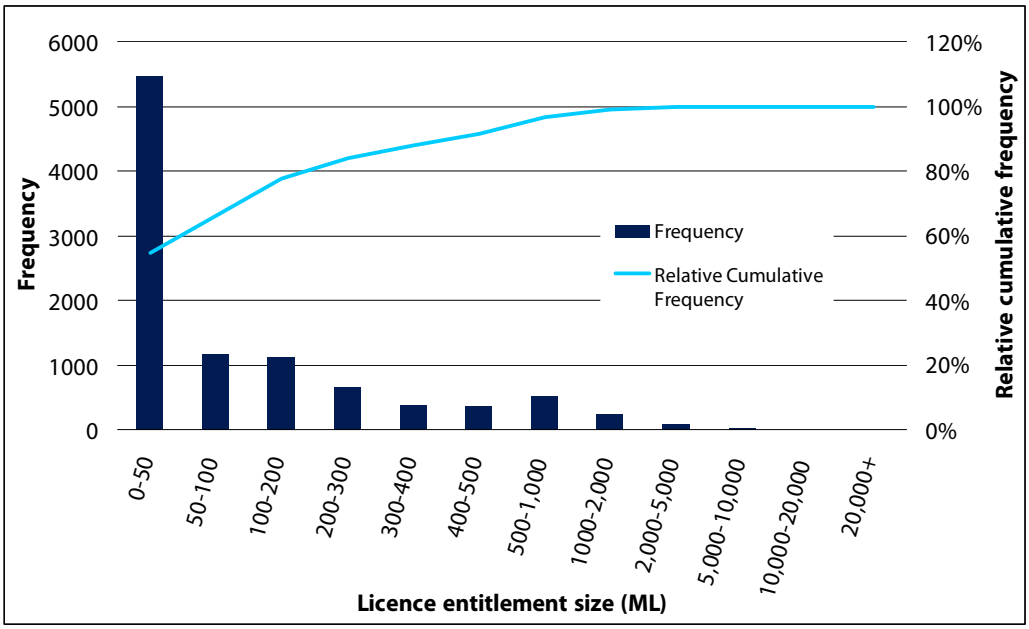
Note: Includes Water Act and Water Management Act licences, assuming 1ML=unit share.
Data source: Extrapolated from NOW's licence database.

Entitlement volumes for groundwater licences

Figure 12.3 shows a histogram of entitlement sizes for groundwater licence holders. We note that:

- 66% of users have an entitlement of 100 ML or less, and
- 91% of users have an entitlement of 500 ML or less.

Figure 12.3 Distribution of entitlement per licence for groundwater



Note: Includes Water Act and Water Management Act licences, assuming 1ML=unit share.
Data source: Extrapolated from NOW's licence database.

Number of users subject to the minimum bill

Table 12.3 lists the number of licences that are forecast to be subject to the minimum bill by 2013/14, and the proportion of total licences in each valley that they account for. This shows that approximately 51% of licences will be subject to the minimum bill of $95 by 2013/14.

Table 12.3 IPART's estimates of users subject to the minimum bill

Water Type	Valley	Estimate of users subject to the minimum by 2014	% users subject to the minimum bill by 2014
Regulated rivers	Border	120	29%
	Gwydir	190	41%
	Namoi	240	36%
	Peel	55	24%
	Lachlan	851	51%
	Macquarie	895	59%
	Far West	n/a	n/a
	Murray	2,023	61%
	Murrumbidgee	848	51%
	North Coast	15	21%
	Hunter	647	42%
	South Coast	50	40%
	TOTAL (REG.)	5,934	51%
Unregulated rivers	Border	294	60%
	Gwydir	223	53%
	Namoi	305	51%
	Peel	106	45%
	Lachlan	730	70%
	Macquarie	1,385	66%
	Far West	682	74%
	Murray	753	74%
	Murrumbidgee	902	60%
	North Coast	2,407	52%
	Hunter	1,234	43%
	South Coast	3,191	71%
	TOTAL (UNREG.)	12,212	60%
Groundwater	GW Inland	1,515	24%
	GW Coastal	1,869	49%
	TOTAL (GW)	3,384	34%
Total[a]		21,530	51%

a Totals may not add due to rounding.

Sample bills for regulated rivers

Regulated river users pay charges to both State Water and NOW. Unlike State Water's charge, the NOW component is the same for both high security users and general security users.

Table 12.4 and Table 12.5 show the forecast NOW bills only for 'small' (100ML) and 'large' (500ML) entitlement holders, respectively. Table 12.6 to Table 12.9 show the combined NOW and State Water bills for small and large entitlement holders. Due to the State Water components, these tables also distinguish between high and general security entitlement holders.

The forecast bills in Table 12.4 to Table 12.9 assume that actual usage is equal to the forecast usage volumes we used in setting prices. These forecast usage volumes (as a % of total entitlement) are listed in the tables. If an entitlement holder's usage is less than this forecast, then the bills will be smaller than those listed in the table. Conversely, if usage is greater than the forecasts, then bills will exceed the values shown in the table.

These tables suggest that:

- forecast changes in NOW bills from 2009/10 to 2013/14 range from 19% (Murray) to 73% (Peel, Lachlan, North Coast, Hunter, South Coast)
- forecast changes in combined NOW and State Water bills from 2009/10 to 2013/14 range from:
  - 8% (Murrumbidgee) to 78% (Gwydir, Peel) for high security licences
  - 4% (Murrumbidgee) to 55% (North Coast) for general security licences.

Table 12.4 NOW bill for high/general security user with forecast usage – small entitlement (100ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % Increase
Border	56%	231	278	294	299	29%
Gwydir	47%	121	145	172	176	45%
Namoi	63%	213	255	306	355	67%
Peel	27%	174	209	251	301	73%
Lachlan	37%	139	166	200	240	73%
Macquarie	45%	156	187	224	255	64%
Murray	66%	163	185	190	193	19%
Murrumbidgee	67%	122	146	155	158	30%
North Coast	9%	317	380	456	548	73%
Hunter	67%	204	244	293	352	73%
South Coast	38%	373	448	537	645	73%

Table 12.5 NOW bill for high/general security user with forecast usage – large entitlement (500ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % Increase
Border	56%	1,157	1,389	1,469	1,497	29%
Gwydir	47%	606	727	860	880	45%
Namoi	63%	1,064	1,277	1,532	1,774	67%
Peel	27%	872	1,046	1,255	1,506	73%
Lachlan	37%	694	832	999	1,198	73%
Macquarie	45%	779	935	1,122	1,274	64%
Murray	66%	814	926	952	965	19%
Murrumbidgee	67%	608	729	773	789	30%
North Coast	9%	1,584	1,901	2,282	2,738	73%
Hunter	67%	1,018	1,221	1,465	1,758	73%
South Coast	38%	1,866	2,239	2,687	3,224	73%

Table 12.6 Combined NOW/State Water bill for high security user with forecast usage – small entitlement (100ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % Increase
Border	56%	1,034	1,528	1,688	1,811	75%
Gwydir	47%	1,147	1,875	1,939	2,040	78%
Namoi	63%	1,930	2,688	2,851	2,955	53%
Peel	27%	2,019	2,689	3,113	3,598	78%
Lachlan	37%	1,244	1,682	1,819	1,966	58%
Macquarie	45%	1,111	1,506	1,680	1,853	67%
Murray	66%	702	758	768	774	10%
Murrumbidgee	67%	605	631	646	655	8%
North Coast	9%	1,121	1,372	1,557	1,769	58%
Hunter	67%	3,044	3,567	3,577	3,598	18%
South Coast	38%	2,390	3,035	3,465	3,954	65%

Table 12.7 Combined NOW/State Water bill for general security user with forecast usage – small entitlement (100ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % Increase
Border	56%	937	1,060	1,073	1,065	14%
Gwydir	47%	876	1,085	1,100	1,091	25%
Namoi	63%	1,744	2,258	2,285	2,310	32%
Peel	27%	1,041	1,257	1,404	1,570	51%
Lachlan	37%	828	1,128	1,184	1,247	51%
Macquarie	45%	841	1,080	1,145	1,202	43%
Murray	66%	647	708	706	702	9%
Murrumbidgee	67%	510	529	533	530	4%
North Coast	9%	1,009	1,218	1,378	1,561	55%
Hunter	67%	1,695	1,991	2,012	2,044	21%
South Coast	38%	1,952	2,359	2,639	2,956	51%

Table 12.8 Combined NOW/State Water bill for high security user with forecast usage – large entitlement (500ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % Increase
Border	56%	5,168	7,638	8,441	9,056	75%
Gwydir	47%	5,737	9,376	9,693	10,198	78%
Namoi	63%	9,651	13,439	14,256	14,776	53%
Peel	27%	10,095	13,447	15,567	17,991	78%
Lachlan	37%	6,222	8,410	9,096	9,832	58%
Macquarie	45%	5,556	7,531	8,399	9,266	67%
Murray	66%	3,509	3,790	3,839	3,868	10%
Murrumbidgee	67%	3,024	3,157	3,231	3,274	8%
North Coast	9%	5,605	6,859	7,783	8,845	58%
Hunter	67%	15,218	17,836	17,887	17,992	18%
South Coast	38%	11,948	15,176	17,325	19,772	65%

Table 12.9 Combined NOW/State Water bill for general security user with forecast usage – large entitlement (500ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % Increase
Border	56%	4,687	5,300	5,366	5,326	14%
Gwydir	47%	4,379	5,426	5,498	5,453	25%
Namoi	63%	8,718	11,289	11,426	11,551	32%
Peel	27%	5,203	6,287	7,021	7,851	51%
Lachlan	37%	4,141	5,640	5,921	6,237	51%
Macquarie	45%	4,203	5,401	5,724	6,011	43%
Murray	66%	3,233	3,540	3,529	3,508	9%
Murrumbidgee	67%	2,549	2,647	2,666	2,649	4%
North Coast	9%	5,047	6,091	6,890	7,805	55%
Hunter	67%	8,476	9,956	10,062	10,222	21%
South Coast	38%	9,761	11,793	13,196	14,782	51%

Sample bills for unregulated river licence holders

Table 12.10 and Table 12.11 show the forecast bills for small and large unregulated river entitlement holders, assuming usage levels in line with the forecast usage volumes we used in setting prices. They show that forecast changes in NOW's bills for 2009/10 to 2013/14 range from a decrease of 12% (Hunter) to increases of 73% (Border, Gwydir, Namoi, Peel, and Murrumbidgee).

If an entitlement holder's usage is less than we have assumed in setting prices, then bills will be smaller than those listed in the tables. As outlined in Chapter 8, we have assumed that users extract 100% of their entitlement, when setting prices. Therefore, bills for 100ML and 500ML of entitlement will not be higher than those listed in Table 12.10 and Table 12.11, respectively.

Table 12.10 Unregulated rivers - Bill for a small entitlement (100ML) with 100% usage ($2009/10)

	2010	2012	2013	2014	Total % Increase
Border	278	334	401	481	73%
Gwydir	278	334	401	481	73%
Namoi	278	334	401	481	73%
Peel	278	334	401	481	73%
Lachlan	495	594	712	756	53%
Macquarie	495	594	712	756	53%
Far West	578	538	577	601	4%
Murray	512	615	738	872	70%
Murrumbidgee	618	742	891	1,069	73%
North Coast	687	790	859	902	31%
Hunter	457	371	392	403	-12%
South Coast	359	313	325	338	-6%

Table 12.11 Unregulated rivers - Bill for a large entitlement (500ML) with 100% usage ($2009/10)

	2010	2012	2013	2014	Total % Increase
Border	1,391	1,670	2,004	2,404	73%
Gwydir	1,391	1,670	2,004	2,404	73%
Namoi	1,391	1,670	2,004	2,404	73%
Peel	1,391	1,670	2,004	2,404	73%
Lachlan	2,474	2,968	3,562	3,782	53%
Macquarie	2,474	2,968	3,562	3,782	53%
Far West	2,888	2,691	2,887	3,006	4%
Murray	2,562	3,074	3,689	4,361	70%
Murrumbidgee	3,092	3,710	4,453	5,343	73%
North Coast	3,434	3,949	4,295	4,512	31%
Hunter	2,286	1,853	1,959	2,016	-12%
South Coast	1,794	1,563	1,626	1,690	-6%

Sample bills for groundwater

Table 12.12 to Table 12.15 show the forecast bills for small and large groundwater entitlement holders, assuming our forecast usage levels. Table 12.12 and Table 12.13 show that for users on a 2-part tariff, forecast changes in NOW's bills for 2009/10 to 2013/14 range from decreases of 22% (Coastal valleys) to an increase of 73% (Murrumbidgee). Table 12.14 and Table 12.15 show that for users on a 1-part tariff, forecast changes in NOW's bills for 2009/10 to 2013/14 range from increases of 17% (Coastal valleys) to 158% (Murrumbidgee).

If an entitlement holder's usage is less than we have assumed in setting prices, then bills will be smaller than those listed in the tables. As we assumed that users extract 100% of their groundwater entitlement, bills for 100ML and 500ML of entitlement will not be higher than those listed in the tables below.

Table 12.12 Groundwater users on a 2-part tariff - Bill for a small entitlement (100ML) with 100% usage ($2009/10)

	2010	2012	2013	2014	Total % Increase
Border	371	445	534	627	69%
Gwydir	371	445	534	627	69%
Namoi	371	445	534	627	69%
Peel	371	445	534	627	69%
Lachlan	464	557	594	627	35%
Macquarie	464	557	594	627	35%
Far West	682	564	594	627	-8%
Murray	395	474	569	627	59%
Murrumbidgee	184	221	266	319	73%
North Coast	682	520	528	533	-22%
Hunter	682	520	528	533	-22%
South Coast	682	520	528	533	-22%

Table 12.13 Groundwater users on a 2-part tariff - Bill for a large entitlement (500ML) with 100% usage ($2009/10)

	2010	2012	2013	2014	Total % Increase
Border	1,855	2,226	2,672	3,136	69%
Gwydir	1,855	2,226	2,672	3,136	69%
Namoi	1,855	2,226	2,672	3,136	69%
Peel	1,855	2,226	2,672	3,136	69%
Lachlan	2,319	2,783	2,971	3,136	35%
Macquarie	2,319	2,783	2,971	3,136	35%
Far West	3,412	2,821	2,971	3,136	-8%
Murray	1,977	2,372	2,846	3,136	59%
Murrumbidgee	922	1,107	1,328	1,593	73%
North Coast	3,412	2,601	2,639	2,666	-22%
Hunter	3,412	2,601	2,639	2,666	-22%
South Coast	3,412	2,601	2,639	2,666	-22%

Table 12.14 Groundwater users on a 1-part tariff - Bill for a small entitlement (100ML) with 100% usage ($2009/10)

	2010	2012	2013	2014	Total % Increase
Border	247	445	534	627	154%
Gwydir	247	445	534	627	154%
Namoi	247	445	534	627	154%
Peel	247	445	534	627	154%
Lachlan	306	557	594	627	105%
Macquarie	306	557	594	627	105%
Far West	455	564	594	627	38%
Murray	263	474	569	627	139%
Murrumbidgee	124	221	266	319	158%
North Coast	455	520	528	533	17%
Hunter	455	520	528	533	17%
South Coast	455	520	528	533	17%

Table 12.15 Groundwater users on a 1-part tariff - Bill for a large entitlement (500ML) with 100% usage ($2009/10)

	2010	2012	2013	2014	Total % Increase
Border	1,237	2,226	2,672	3,136	154%
Gwydir	1,237	2,226	2,672	3,136	154%
Namoi	1,237	2,226	2,672	3,136	154%
Peel	1,237	2,226	2,672	3,136	154%
Lachlan	1,529	2,783	2,971	3,136	105%
Macquarie	1,529	2,783	2,971	3,136	105%
Far West	2,275	2,821	2,971	3,136	38%
Murray	1,314	2,372	2,846	3,136	139%
Murrumbidgee	618	1,107	1,328	1,593	158%
North Coast	2,275	2,601	2,639	2,666	17%
Hunter	2,275	2,601	2,639	2,666	17%
South Coast	2,275	2,601	2,639	2,666	17%

12.2.2 Significance of water management charges to farm costs

To inform our assessment of the likely impacts of this draft determination, we considered NOW bills as a proportion of total farm costs. In doing so, we recognise that there is significant variation across water users in regards to the relative significance of water charges to overall farm costs. Rather than being a definitive assessment of the impact of NOW's new prices on total farm costs for all users, our

assessment is intended to provide an indication of the **relative** contribution of NOW's prices to farm costs.

Our analysis below indicates that NOW's water management prices account for a small proportion of farm costs.

Estimating farm costs per ML of entitlement

Information about farm costs is limited and only available in the form of an average across all farms. This does not provide a link between farm costs and water usage.

To estimate average farm costs per ML of entitlement, we took the average farm costs per hectare (as published by ABARE) and multiplied this by the area-to-volume conversion ratio set in the 2006 Determination.[125] This approach is based on the assumption that, in general, larger farms have water licences with larger entitlements.

Table 12.16 shows the resulting estimate of farm cash costs per ML of entitlement across valleys. It should be noted that figures are averages for each valley, and may not capture the entire range of farms within a region.

[125] This method assumes that the conversion ratios used in the 2006 Determination provide a reasonable estimate for the link between area under irrigation and entitlement volumes.

Table 12.16 Estimate of average farm costs per ML of entitlement ($2009/10)

Valley	Average farm cash costs per hectare $2009/10	2006 Determination area-to-volume conversion ratio	Average farm cash costs per ML of entitlement $2009/10
Border	3,559	24%	868
Gwydir	NA	NA	NA
Namoi	1,922	24%	469
Peel	NA	NA	NA
Lachlan	2,594	28%	721
Macquarie	2,131	28%	592
Far West	NA	NA	NA
Murray	2,860	33%	953
Murrumbidgee	1,242	48%	592
North Coast	NA	NA	NA
Hunter	NA	NA	NA
South Coast	NA	NA	NA

Note: ABARE does not collect farm cost data for those valleys denoted as 'NA', and IPART has not been able to obtain reliable estimates from other sources.

Source: ABARE survey of irrigation farms in the Murray Darling Basin for 2007/08. Figures have been adjusted for inflation.

As ABARE does not collect data for all regions, we have been unable to obtain reliable data for farm expenditure in these regions. We invite stakeholders to provide comment or data to support additional analysis, in their responses to this draft report.

IPART's draft prices as a proportion of farm cash costs

Using the figures in Table 12.16, Table 12.17 to Table 12.21 below show our estimates of NOW's draft prices as a proportion of average farm costs. For regulated rivers, Table 12.17 shows figures for NOW's prices only, while Table 12.18 and Table 12.19 present results for combined NOW/State Water bills.

The prices used to calculate the figures in these tables are the sum of fixed and usage charges. In terms of NOW's prices, these figures therefore err on the high side, as they assume that 100% of entitlement is used.

Table 12.17 to Table 12.21 show that by 2013/14, as a proportion of average farm costs, NOW's water management prices under this draft determination range from:

- 0.23% (Murray) to 0.89% (Namoi) for regulated rivers
- 0.93% (Murray general security) to 7.88% (Namoi high security) for combined NOW and State Water bills for regulated rivers
- 0.55% (Border) to 1.81% (Murrumbidgee) for unregulated rivers
- 0.54% (Murrumbidgee) to 1.34% (Namoi) for groundwater.

Table 12.17 Draft prices for regulated rivers as a proportion of farm cash costs per ML

	2010	2012	2013	2014	Change from 2010-2014
Border	0.35%	0.40%	0.42%	0.43%	0.08%
Namoi	0.57%	0.64%	0.77%	0.89%	0.32%
Lachlan	0.29%	0.35%	0.42%	0.50%	0.21%
Macquarie	0.39%	0.43%	0.52%	0.59%	0.20%
Murray	0.18%	0.22%	0.23%	0.23%	0.05%
Murrumbidgee	0.22%	0.28%	0.30%	0.31%	0.09%

Table 12.18 Combined State Water and NOW prices as a proportion of farm cash costs per ML – high security licence

	2010	2012	2013	2014	Change from 2010-2014
Border	1.61%	2.25%	2.46%	2.60%	1.00%
Namoi	5.23%	7.30%	7.65%	7.88%	2.65%
Lachlan	2.77%	3.79%	4.04%	4.32%	1.55%
Macquarie	2.79%	3.76%	4.12%	4.48%	1.68%
Murray	0.89%	0.99%	1.00%	1.00%	0.11%
Murrumbidgee	1.24%	1.30%	1.32%	1.34%	0.10%

Table 12.19 Combined State Water and NOW prices as a proportion of farm cash costs per ML – general security licence

	2010	2012	2013	2014	Change from 2010-2014
Border	1.50%	1.71%	1.75%	1.74%	0.25%
Namoi	4.84%	6.38%	6.45%	6.50%	1.67%
Lachlan	2.19%	3.02%	3.16%	3.32%	1.13%
Macquarie	2.34%	3.04%	3.22%	3.38%	1.04%
Murray	0.83%	0.94%	0.93%	0.93%	0.09%
Murrumbidgee	1.08%	1.13%	1.13%	1.13%	0.05%

Table 12.20 Draft prices for unregulated rivers as a proportion of farm cash costs per ML

	2010	2012	2013	2014	Change from 2010-2014
Border	0.32%	0.38%	0.46%	0.55%	0.23%
Namoi	0.59%	0.71%	0.85%	1.03%	0.43%
Lachlan	0.69%	0.82%	0.99%	1.05%	0.36%
Macquarie	0.84%	1.00%	1.20%	1.28%	0.44%
Murray	0.54%	0.64%	0.77%	0.91%	0.38%
Murrumbidgee	1.05%	1.25%	1.51%	1.81%	0.76%

Table 12.21 Draft prices for groundwater as a proportion of farm cash costs per ML

	2010	2012	2013	2014	Change from 2010-2014
Border	0.43%	0.51%	0.62%	0.72%	0.30%
Namoi	0.79%	0.95%	1.14%	1.34%	0.55%
Lachlan	0.64%	0.77%	0.82%	0.87%	0.23%
Macquarie	0.78%	0.94%	1.00%	1.06%	0.28%
Murray	0.41%	0.50%	0.60%	0.66%	0.24%
Murrumbidgee	0.31%	0.37%	0.45%	0.54%	0.23%

12.2.3 The ability to trade entitlement to mitigate impact

A further consideration when assessing the impact of this draft determination is the ability of water users to trade entitlements to mitigate the impact of price increases and operational risk in general.

In its December 2009 submission, NOW stated that:

> In the order of 90% of commercial water extractions in NSW is covered by water sharing plans and is therefore open to trading of allocation water.[126]

NOW also argued that its:

> …proposed price rises per ML should also be considered in the light of the value of water to irrigation businesses. On the water market, the price per ML of allocation water typically varies in the range of $200 to $2,000/ML depending on location, security and climatic conditions.[127]

[126] NOW December 2009 submission, p 58.
[127] Ibid, p 74.

Permanent trades

Table 12.22 shows key indicators of water market activity and price for permanent water trades over 2005/06 to 2009/10. We note that trades have increased dramatically over the observation period, and that annual volumes have increased from 16.5 GL to 366 GL. This increased activity is primarily due to purchases of entitlements by the Commonwealth.

Table 12.22 Permanent water trading statistics for NSW

	2005/06	2006/07	2007/08	2008/09	2009/10	Total
Trades	40	44	94	248	339	765
Trade volume (ML)	16,519	38,061	136,801	159,021	365,952	716,353
Total value ($'000)	38,340	56,959	77,782	221,090	547,573	941,743
Average Size (ML)	413	865	1,455	641	1,080	936
Average trade value ($)	958,495	1,294,512	827,468	891,490	1,615,259	1,231,036
Average $/ML	2,321	1,497	569	1,390	1,496	1,315

Note: Trades that were recorded without a price, or with a price of $0, have not been included. These trades may represent transfers of property or other events where a price has been paid for the water.

Source: http://www.wma.dnr.nsw.gov.au/wma/WaterShareIntraWSLocSearch.jsp?selectedRegister=WaterShare

We recognise that water cannot be traded in all areas at all times. We also acknowledge that there are questions surrounding the practical ability to trade, and the true economic cost of trading (eg, the requirement to divest from a farm as the value of the entitlement may be tied to the farm).

Nevertheless, we note that, where possible, water trading provides users with an opportunity to mitigate the impact of higher water prices. We also note that water management charges are generally a small proportion of the value of entitlements. As an example, a general security licence holder in the Murrumbidgee with a 500ML licence will pay a combined annual NOW/State Water bill of $3,331 by 2013/14.[128] However, permanent trade market prices for that entitlement from 2005/06 to 2009/10 have been between $401,000 and $964,500.[129]

Information about the traded value of water demonstrates that the value of water to irrigators is many times greater than the water management charges levied by NOW. Our draft determination of prices and assessment of customer impact has taken the long-term management of this valuable asset into consideration. We are satisfied that draft prices strike an appropriate balance between mitigating customer impact and ensuring the continued health of water assets.

[128] Assuming 100% of entitlement is extracted.

[129] Market values have been assessed using permanent trade information, accessed from the NSW Office of Water's online register.

13 Reporting framework and other findings of our review

At our last review of water management prices nearly 4 years ago, we strongly expressed our concern about the (then) Department of Natural Resources' inadequate response to several long-standing deficiencies in its systems and performance. Some specific deficiencies we identified included:

- insufficient linking of expenditure to obligations
- an absence of demonstrated options analysis for the proposed service delivery expenditures, including testing the contestability of the tasks and services to be provided.[130]

At this 2011 price review, we have found that these deficiencies remain. In addition, we have identified several new issues that NOW will need to address during the 2011 Determination period.

To create stronger incentives for NOW to deal with these deficiencies and issues effectively in the coming determination period, we have taken several of these issues into account when making our draft decisions for the 2011 Determination. We have also written to the Minister for Water about our concerns and made recommendations for addressing these concerns. In addition, we have made a draft decision to establish an annual reporting framework, which includes measures that we expect NOW to report against over the 2011 Determination period.

The section below summarises our draft decisions and recommendations to the Minister. The subsequent sections explain our concerns and issues in more detail, and discuss how we have taken our concerns into account in making the draft determination, and our recommendations to the Minister. The final section sets out our reporting, and other, expectations of NOW over the 2011 Determination period.

[130] IPART's 2006 Final Report on its review of *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010*, p 10.

13.1 Summary of draft decisions and recommendations to improve NOW's systems and performance

Draft decisions

21 IPART's draft decisions are to:

- establish a framework whereby NOW provides IPART with an annual report that is suitable for public release and includes the information specified in Table 13.1 below by the last working day of October of each year of the 2011 Determination period
- provide NOW with an Annual Information Return excel spreadsheet that has been developed by IPART, for NOW to complete and return to IPART by the last working day of October of each year of the 2011 Determination period.

Table 13.1 Reporting measures under this draft determination

Measure
1. Annual financial reports, which include the following information by valley or in the case of groundwater by the inland/coastal divisions:[a]
▾ Revenue collected from water charges
▾ Operating expenses separately identified by activity codes
▾ Current year allowed expenditure and actual expenditures
▾ Explanation of the variation between allowed operating/capital expenditures and actual expenditure
▾ FTE staff reports on the resources allocated to each activity code
2. Actual revenue received from the Commonwealth in relation to Scenario 2 expenditure
3. Report progress against delivery of the Monopoly Service Offering included in Appendix L, including:
▾ Expanding the hydrometric network by 128 stations to a total of 513 by 2014/15, and increasing the frequency of visits to these stations to 6 visits a year to improve the monitoring information available to NOW and users.
▾ Completing the Water Sharing planning process and its implementation by:
– completing the remaining 18 inland Water Sharing Plans by 2013
– completing the 20 remaining coastal valley Water Sharing Plans by 2013
– revising all existing Water Sharing Plans for Murray Darling Basin River resources by 2014 to enable 'accreditation' of existing plans with the Basin Plan
– reviewing and remaking a total of 31 existing Water Sharing Plans before 2014, prior to their 10 year expiry date
– implementing the rules under more than 80 water sharing plans across NSW.
▾ Publishing and implementing outstanding operational plans and policies, including:
– the Floodplain Harvesting Policy and rules for issuing floodplain harvesting licences
– the Reasonable Use Guidelines for Basic Landholder Rights Holders to address unconstrained extraction by stock and domestic rights holders
– the Policy for Return Flow Credits for extractive uses
– rules and processes for controlled allocation of unassigned water to licensed users

Measure
– aquifer interference rules and guidelines to inform and manage licensed extractive industries
– planning rules for surface and groundwater interception and extraction
– rules for stormwater harvesting
– rules for groundwater trading in embargoed water sources.
▼ Ensuring that 90% of transactions for the permanent transfer of access licences are processed within 28 days
▼ Ensuring that 60% of all other transactions and approvals are processed within 3 months.

a In allocating costs to valleys, NOW is expected to apply the cost allocation methodology adopted in the 2011 Determination.

In addition, we consider that NOW should:

- Undertake options analysis for its activities, including testing contestability of the services provided.
- Consider and publish a policy on levying water management charges on stock and domestic and other basic rights holders prior to the next price determination in 2014.
- Develop a clear framework about how it will make decisions about what type of government funded meter will be installed, the locations of these installations, and what will be the minimum size entitlement/licence to which its metering scheme will apply, and to provide this framework to IPART by 29 November 2010, for inclusion in IPART's Final Report.

Further, to create stronger incentives for NOW to comply with our reporting framework and address the identified deficiencies of its systems and performance, we have made recommendations to the Minister for Water that he require NOW to:

- improve its consultation with users about performance, expenditures and revenue
- improve its billing systems and administration
- improve its financial systems, including the ring-fencing of expenditures related to the monopoly services
- provide timely, accurate and complete annual reports, as sought by IPART.

13.2 Issues that NOW needs to address over the 2011 Determination period

During this price review, we have identified a range of issues related to NOW's systems and performance that need to be addressed over the 2011 Determination period. Some of these issues were identified at the 2006 price review and have not been addressed, while others are additional issues.

13.2.1 Issues identified in the previous price review that have not been addressed

For the 2006 price review, we separately engaged PB Associates and Halcrow to investigate the (then) Department of Natural Resources' expenditures. Both these consultants identified significant deficiencies with the Department's capital systems. PB Associates recommended that the Department develop an asset management strategy to provide a long-term optimised replacement program for its assets. Halcrow found that the Department's asset management systems did not include key information, such as asset condition data.

In our Final Report on the 2006 Determination, we indicated that we expected the Department to address these deficiencies. In addition, we expected it to provide annual reports to IPART and stakeholders about its expenditures. These reports were intended to improve transparency and to support consultation with stakeholders about the Department's activities.

For this current price review, we engaged PwC to review NOW's operating and capital expenditure. The findings of that investigation indicate that the concerns identified in the 2006 review have not been adequately addressed, and the recommendations that were made have not been implemented.

In relation to NOW's expenditure control and budgeting systems, PwC found that:

- NOW has not adequately examined possibilities for using existing resources more effectively and efficiently. Nor has it consistently provided clear and demonstrable links between its planned activities and planned outcomes.
- In most cases, there is insufficient evidence of robust strategy or business cases underpinning NOW's forecast operating expenditures.
- In many instances, the link between performance information and timelines, cost, quantity, quality, and the achievement of strategic objectives is not clear and in others absent altogether.
- There is no documented evidence that levels of service have been 'stress tested' – for example, by considering what would happen to outcomes if resources were reduced by some plausible level, or what additional outcomes could be delivered from an increase in resources applied to an activity.
- The deficiencies in these systems made it difficult to determine whether the selection of monopoly water management activities NOW has included in its regulated cost base is appropriate and correct.

In relation to NOW's asset management and capital planning framework, PwC found that:

- Asset management practices are not consistently applied across NOW's network of assets, and there are no formal, documented asset management plans or detailed records on asset condition, lives or asset failures.
- Activities to maintain assets are not generally prioritised, so maintenance occurs on an ad hoc basis, only when sufficient resources are available.
- There is currently no asset renewals program, although NOW has proposed the hydrometric network renewals program as part of its 2009 pricing submission.
- There is no standardised approach to capital planning.
- There is a lack of documentation of project planning and delivery, including sufficient documentation of changes to outcomes or deliverables.
- There is no evidence of investment appraisal and prioritisation of expenditure, including expected deliverables, outcomes or justifications of projects.

We also note that Namoi Water submitted that NOW had not allocated sufficient effort to testing contestability of tasks and services provided.[131] It pointed out that in the absence of the discipline of such testing, potential opportunities to achieve efficiencies may be overlooked.

In addition, as discussed further below, NOW did not provide us with timely, accurate or complete annual reports during the 2006 Determination period. As a result, stakeholders have continued to express concern about the absence of reporting and consultation with users on NOW's major initiatives and expenditure.

13.2.2 Additional issues identified in this price review

In addition to the outstanding issues outlined above we identified 3 new issues that NOW needs to address in the 2011 Determination period. These include improving its approach to billing, deciding whether charges should be set for stock and domestic rights holders, and increasing the transparency of its decisions about what type of meter to install where.

Improving approach to billing

In regulating prices, we usually set the maximum prices the regulated entities can charge for their monopoly services. Under the IPART Act, these entities can only charge **less** than the maximum price if authorised by the NSW Treasurer.

[131] Namoi Water submission, 22 June 2010, and Tamworth public hearing, 22 July 2010.

In the course of the current price review, some information has been presented to us that suggests that NOW has not levied all prices we set under the 2006 Determination, and has not sent bills to some water users until many years after the charge was incurred. For example, IPART has identified that potentially up to 5,515 users have not been charged the minimum bill.[132] Further, stakeholders provided examples of bills where usage charges were issued up to 3 years after the event.[133]

We consider that NOW needs to address this issue urgently, by improving its billing systems and administration to ensure more timely and more accurate bills. We also consider that NOW should take steps to ensure that any future decision to not charge a maximum determined price is appropriately authorised by the Treasurer.

Setting charges for stock and domestic rights holders

Although stock and domestic (or 'basic') rights holders can extract water from the water sources NOW manages, they are not currently licenced and do not pay water management charges.

IPART considers that there is merit in NOW considering whether these rights holders should pay water management charges and publish its policy decision prior to the next price review. This will allow us to consider this issue at that price review, and give stock and domestic rights holders an opportunity to participate in the price review process.

Increasing the transparency of its decisions about what type of meter to install where

In reviewing NOW's proposal to establish a meter service charge for government-funded meters, we reached the view that NOW needs to provide better information to users and to IPART about how it will make decisions about what type of meter will be installed where. NOW proposes to install up to 5 different types of government-funded meters. Each of these types has different operating and capital costs. NOW has indicated that it will be entirely responsible for deciding what meter type is installed at different locations. As such, users and user groups will not be able to exercise choice between the different meter types and costs.

Given this, we consider that NOW should develop and publish a clear framework for deciding what meter type will be installed where and what will be the minimum size entitlement/licence that will be subject to the metering program. We request that NOW develops this framework by 29 November 2010, for inclusion in our Final Report on the 2011 Determination.

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[132] These 5,515 users hold licences that NOW has classified as 'Not billed'. Examples include domestic and stock licences and licences with zero entitlement. IPART's 2006 Determination (p 127 of the Final Report) noted that the minimum bill "applies to all water access licences (WALS) for all water sources."

[133] For example, Wyong Shire Council.

We consider this framework will improve the transparency of this project and its objectives, and will assist NOW in managing customer disputes. Further, it will provide information to IPART and users about NOW's approach to decision-making and to controlling pressures on its future operating costs. This will assist us in analysing the efficiency of the operating costs arising from this project during the next price review.

13.3 How we took these issues into account in making the draft determination

In our Final Report on the 2006 Determination, we indicated that if the concerns listed in that report were not addressed prior to the next determination, we may be reluctant to approve price increases. While this determination proposes considerable price increases in percentage terms, we did consider the outstanding concerns about NOW's systems and performance in making our draft decisions, and these considerations resulted in lower price increases than would otherwise have been the case. The sections below highlight 2 specific examples of this. We note also that other examples include our decisions to:

- 'stop the clock' on this review and subsequently delay the determination start date until 1 July 2011 – following the provision of late and insufficient information from NOW; and
- set prices based on lower levels of operating expenditure than those proposed by NOW, which reflected our finding that NOW did not provide sufficient explanation and justification for its proposed expenditure.

13.3.1 Response to concerns about the adequacy of NOW's asset management and capital planning framework

In its submission, NOW proposed the establishment of a regulatory asset base and that it earn a return on capital and a return of capital (depreciation) totalling approximately $5 million a year by 2014.[134] In previous price reviews, IPART had only allowed recovery of depreciation.

The establishment of a regulatory asset base (RAB) greater than zero requires confidence in the prudency and efficiency of past expenditures. Given the seriousness of our consultants' reservations over 2 price reviews, we concluded that we did not have this confidence and therefore set the opening value of the RAB at zero as at 1 July 2011. This means that NOW will not recover depreciation or a return on assets for investments made before that date through prices.

[134] NOW's December 2009 Excel Information Returns to IPART, adjusted for corrected capital expenditure of $2.66 million in 2010/11.

As a result of this decision, NOW is forecast to earn a return on and of its capital investments made after 1 July 2011 of approximately $0.6 million per annum by 2014. This is 89% less than the $5 million a year by 2014 that NOW proposed in its submission.

13.3.2 Response to concerns about the efficiency of the MDBA

In the 2006 review, in relation to the then Murray Darling Basin Commission (MDBC), IPART expressed concerns that:

> … there has been no independent examination of its efficiency. The MDBC is outside the Tribunal's jurisdiction. However, the Tribunal believes that the governments that are signatories to the agreement should consider initiating a study of the efficiency of the MDBC's operations before agreeing to fund expenditures which are then to be passed on to irrigators.[135]

In this review, IPART has received statements from the NSW Commissioner for Water and the Murray Darling Basin Authority (MDBA) about internal efficiency and effectiveness reviews undertaken by the Authority.[136] However, we found that this information was not sufficient for us to be confident that NOW's proposal to increase its user contributions to the MDBA from $1.7 million to about $6 million a year is efficient, or that the allocation of these costs to users is consistent with the impactor pays principle.

Therefore, in calculating the user share of NOW's notional revenue requirement, we decided that the user share of the MDBA contribution should be the same as we allowed for in the 2006 Determination ($1.7 million per annum). We expect that the remaining portion of NOW's proposed user share of this contribution will be funded by the NSW Government.

13.4 IPART's recommendations to the Minister for Water

We consider it a matter of serious concern that issues identified at the time of the last price review have not yet been addressed. It is not acceptable that NOW's systems to ensure the transparency, control, and accountability of its expenditure are not sufficiently robust to support efficient pricing.

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135 IPART's 2006 Final Report on its review of *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010*, p 10.

136 These are via written submissions from these parties, as well as their presentations at IPART's public hearings in July 2010.

Therefore, we have written to the Minister for Water about these issues and have made the following recommendations:

1 That the Minister require NOW to implement mechanisms to facilitate greater consultation with users about its performance, expenditures and revenue.

2 That the Minister require NOW to improve its billing administration and financial systems, including implementing systems for the ring-fencing of expenditures related to its monopoly water management activities before 2014.

3 That the Minister require NOW to comply with IPART's reporting framework, to be set out in the Final Report on the 2011 Determination.

In relation to recommendation 1, our letter also noted various stakeholders' suggestions about the benefits of State Water's Consultative Committees. In relation to recommendation 2, we noted that these actions would ensure that NOW can accurately report its expenditures and revenue on monopoly services by activity, water source and valley (or in the case of groundwater, by coastal and inland regions).

13.5 IPART's reporting framework and other expectations of NOW

The Final Report on the 2006 Determination indicated that we expected NOW to provide annual reports to us over the 2006 Determination period. These reports were to address each of the measures listed in Table 13.2 below.

Table 13.2 Water resource management reporting measures of the 2006 Determination

Measure
1. Audited consolidated financial accounts, with a reconciliation to the IPART regulated component of business
2. Valley based financial reports, which include the following information:
i) Revenue collected from water charges
ii) Operating expenses separately identified by activity codes
iii) Current year budget, actual expenditures and revenue
iv) Explanation of the variation between actual operating/capital expenditures and budgeted expenditure
v) Explanation of how costs have been apportioned to individual valleys
vi) Forecast operating budgets for the following year
vii) FTE staff reports on the resources allocated to each activity code
3. Water availability reports
4. Reporting of environmental water usage for individual river valleys consistent with a methodology agreed with the NWI

Source: IPART, *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation, from 1 October 2006 to 30 June 2010*, p 201.

Unfortunately, NOW did not meet our expectations regarding reporting. In particular:

- It provided the 2006/07 report on 30 December 2008. This report was incomplete and, following the identification of apparent errors by NOW, was re-submitted on 27 January 2010. The first report did not provide information on a valley and water source basis, and did not include complete information on measures 1, 2iii) 2iv), 2v), 2vi) or 4. The subsequent report did not include complete information on 1, 2iv), 2vi) or 4.
- It provided the 2007/08 report on 30 April 2009. This report was also incomplete and, following the identification of apparent errors by NOW, was re-submitted on 27 January 2010. The first and subsequent reports did not include complete information on measures 1, 2iv), 2vi) or 4.
- It provided the 2008/09 report on 27 January 2010, and this report did not include complete information on items 1, 2 iv), 2vi) or 4.
- It provided the 2009/10 report on 27 January 2010, and this report did not include complete information on items 1, 2 iv) or 4.

We wrote to NOW on 2 occasions during the determination period, to seek improvements in the timeliness and completeness of NOW's reports.[137] The NSW Irrigators' Council also wrote to IPART concerned about NOW's failure to provide timely reports.[138]

In response to criticisms made by PwC about this late reporting, NOW stated that "late publication of the annual expenditures reports to IPART is as a result of the staff resource limitations of the Office."[139]

The IPART Act establishes our role and powers to monitor price determinations. IPART expects that NOW will prioritise this reporting activity to ensure that timely, complete and accurate reports are provided consistent with the measures we set out in our Final Report on the 2011 Determination. In addition, as noted above, we have written to the Minister recommending that he require NOW's compliance with reporting obligations.

In making our draft decision on the reporting framework, we considered NOW's proposal, PwC's review of this proposal, and stakeholder comments.

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[137] Mr Jim Cox (IPART) correspondence to Mr Mark Duffy (DWE), 11 September 2008. Mr Jim Cox correspondence to Minister Costa, 19 February 2009.

[138] Mr Andrew Gregson (NSWIC) correspondence to Mr Colin Reid (IPART) 20 January 2009.

[139] NSW Office of Water, response to PwC's Draft Report on its *Review of NSW Office of Water's water management expenditure*, 16 June 2010, p 18.

13.5.1 NOW's proposal

In its submission, NOW proposed a large number of performance indicators and performance targets.[140] IPART requested further information about this proposal. In response, NOW identified that:

- it currently reports externally against 9 of these measures via the State Plan reporting framework or other mechanisms
- its proposed reporting framework is for internal use and it is not proposing to report against these measures annually to IPART
- it does not propose a stronger link between price and performance (eg, whereby some of its revenue could be placed at risk depending on performance).[141]

13.5.2 PwC's review

The measures proposed by NOW were reviewed by PwC. PwC concluded that NOW's proposed indicators do not enable quantifiable assessment of NOW's performance or efficiency. Specifically:

> Many of the performance indicators and output measures proposed by NOW in its submission to IPART do not enable the quantifiable assessment of its performance in efficiently and effectively delivering monopoly services. As such, many of the proposed performance indicators and output measures are of limited value to external stakeholders.
>
> The link between performance information and timelines, cost, quantity, quality, and the achievement of strategic objectives, is in many instances not clear or even provided. In many instances the performance indicators and output measures fail to provide information (either qualitative or quantitative) on the extent to which an activity is achieving its objective.[142]

PwC proposed an alternative set of performance indicators and output measures.[143] NOW has argued against the performance indicators proposed by PwC, suggesting that these indicators do not satisfy PwC's own criteria of simple, measureable, achievable and targeted, and that some of the measures indicate a lack of understanding of NOW's business.[144]

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140 See Appendix 1 of NOW's December 2009 submission.
141 Correspondence from NOW to IPART, 23 February 2010.
142 PwC's Final Report on its *Review of NSW Office of Water's water management expenditure*, 30 June 2010, p 151.
143 Ibid, pp 148-151.
144 NSW Office of Water response to PwC's Draft Report on its *Review of NSW Office of Water's water management expenditure*, 16 June 2010, p 18.

13.5.3 Stakeholder comments

A number of stakeholders made suggestions about NOW's reporting obligations for the 2011 Determination period and potential incentives to improve performance. For example:

- Various stakeholders, including State Water Coastal Valleys Customer Service Committee and MidCoast Water, sought greater participation by NOW in the existing systems of State Water customer service committees and the extension of similar committees to unregulated river valleys. They argued that participation in these Committees will increase NOW's accountability and facilitate better communication with users.
- A number of stakeholders, including Lachlan Valley Water and Macquarie River Food & Fibre, endorsed PwC's performance indicators. Lachlan Valley Water proposed an additional performance indicator that measures the speed of processing water consent transactions.[145]
- In contrast, other stakeholders, such as the NSWIC, recommended retention and enforcement of the current reporting measures.[146] These stakeholders argued that this information is of most use to users and that they are concerned about the potential costs (flowing through to users) of either the PwC or NOW reporting schedules.
- Macquarie River Food & Fibre submitted that customers should have access to valley-based reports from NOW on a six-monthly, or at least annual, basis. It also recommended that customers should have guaranteed performance standards, for the services for which they are required to pay.
- Namoi Water, Macquarie River Food & Fibre and Lachlan Water argued that performance be directly linked to revenue (ie, mechanisms to adjust prices in the event of inadequate performance) and that prices be adjusted where performance targets are not achieved.
- Namoi Water proposed the establishment of regulatory accounts (to improve transparency), and the independent auditing of these accounts (to ensure more robust accounting and separation between monopoly and non-monopoly order services).

[145] Lachlan Valley Water's proposed output measure has been included in PwC's Final Report.

[146] For example, Mr Andrew Gregson, NSW Irrigators Council, at the Sydney public hearing, 23 July 2010.

13.5.4 IPART's considerations and conclusions

We carefully considered the content and scope of the annual reports to provide information to stakeholders, taking into account the various proposals and views discussed above. We are concerned about the potential costs of collating and reporting against PwC's proposed indicators. We are also concerned about NOW's capacity to provide such detailed reports in a timely fashion. We note the views of some stakeholders that the core information of most use to stakeholders is the expenditure information listed in the 2006 Determination. While recognising the value of the more comprehensive reporting suggested by PwC, given NOW was unable to meet the more limited reporting measures of the 2006 Determination in a timely fashion, we decided not to accept PwC's recommendations.

Rather, we decided to establish a framework under which we expect NOW to provide an annual public report to IPART, which includes the information set out in Table 13.1 above. This incorporates simplified measures from the 2006 Determination and an expectation that NOW will report its annual progress against the Monopoly Service Output Schedule, discussed in Chapter 3. This Schedule sets out NOW's proposed monopoly service activities for the 2011 Determination period and the expected outcomes of these activities. It creates a 'baseline' for assessing NOW's performance over the coming determination period and the next. The schedule is included as Appendix L.

NOW is expected to provide these annual public reports to IPART by the last working day of October of each year of the determination period. In addition, IPART will provide NOW with an Annual Information Return Excel spreadsheet to be returned by the last working day of October each year.

We note that while we can set out our reporting framework and expectations, our legislative powers do not enable us to compel NOW to provide those annual reports, unless the reports are for the purpose of establishing and reporting to the Minister on NOW's compliance with the determination or in connection with a review by IPART of pricing policies.[147] Given NOW's past failures to provide complete and timely reports, we have recommended that the Minister for Water require NOW to comply with our reporting framework, as discussed above.

We also considered the option of creating a closer link between performance and prices in the context of both regulatory precedents for such incentives and the requirements of IPART's own legislation. A recent study we commissioned from Cambridge Economic Policy Associates (CEPA) included various precedents of regulatory decisions where revenue had been placed at risk if performance is short of identified objectives.[148] This provides some confidence that a mechanism could be designed and be effective.

[147] Section 24AA of the IPART Act sets out IPART's monitoring powers.
[148] CEPA, *Review of IPART's approach to incentive based regulation*, October 2009.

The IPART Act requires us to determine maximum prices and does not allow IPART to re-open its determination within the determination period unless IPART decides to make a new determination. However, where it is impractical to set maximum prices, IPART can determine a methodology to fix prices in some circumstances.[149] We considered whether a methodology could be used to create additional performance incentives for NOW. However, after considering the difficulties of designing a performance incentive suitable for NOW that met the requirements of the IPART Act, we decided not to adopt a mechanism for the following reasons:

- Any methodology needs to be sufficiently clear and objective to enable a third party with the necessary information to use the methodology and ascertain the maximum price. However, in relation to NOW only a small number of indicators are currently subject to third party verification[150] and these indicators represent a relatively narrow picture of NOW's performance.
- A methodology should not be used as a way of imposing a penalty. As such, in the event of unsatisfactory performance, the methodology could only be used to reduce revenue if performance expectations were proportionally reduced. For example, if fewer water sharing plans were gazetted by the second year of a determination period than planned, a methodology could reduce revenue to be commensurate with the efficient costs of the services that had been delivered, but only if it was accepted that the remaining plans were no longer required.
- There are questions about NOW's responsiveness to revenue risk.

[149] Section 13A of the IPART Act sets out the circumstances in which a methodology can be adopted in place of setting maximum prices.

[150] Examples of independently audited performance measures published by NOW include: the gazettal of water sharing plans; the percentage of NSW water resources covered by water sharing plans; and average time taken to process water trades.

Appendices

A List of Appendices

B Summary of NOW's Submission

B.1 Overview of NOW's submission

Key elements of NOW's submission include the following:

Price structure

- **Replacement of valley based groundwater charges with consolidation of charges into 2 areas: inland and coastal.**
- NOW has not proposed consolidation of surface water valley charges.
- **100% of NOW's revenue to be recovered via fixed (per entitlement) charges.** Although as an alternative, and "at a minimum", NOW's submission also presents prices for regulated rivers assuming a 70:30 split between its fixed and usage charges (with unregulated and groundwater customers facing fixed charges).
- **Maintenance of a minimum bill of $60 per annum.**

Consumption forecasts

- **Forecast water usage from regulated rivers to be based on average water use over the last 15 years** (as per State Water's proposal).
- **Forecast water usage from unregulated rivers and groundwater to be based on entitlement/user share volumes**.

Regulatory framework

- **A 3 year determination period (ie, one year less than State Water), from 2010/11 to 2012/13.**
- **Establishment of a Regulatory Asset Base (RAB), and a return on capital using a real pre-tax WACC of 7.9%** (as per State Water's proposal)
- **Removal of the 20% cap on annual increases in bills (which was set at IPART's 2006 Determination).**
- **Changes to NOW's activity cost codes**.
- **Full cost recovery -** NOW proposes that prices be set to fully recover users' share of its water management costs.

Prices

- **Significant price increases**, resulting in price and bill increases over 2009/10 to 2012/13 of well over 100% in most valleys, and bills greater than 300% for some valleys and customers. The proposed price increases are driven by:
  - NOW's proposed move to full cost recovery in pricing.
  - NOW's stated need for additional FTEs, which increases forecast operating expenditure.
  - NOW's proposal for a return on capital.
  - The increase in NSW's contribution to MDBA water management activities to be recovered via NOW charges.

Table B.1 lists the break-up of NOW's revenue needs from users.

Table B.1 Break-up of revenue needs for NOW's core water management activities ($million, $2009/10)

	User share 2009/10[a]	Required user share 2010/11	Required user share 2011/12	Required user share 2012/13
Operating costs	30.7	38.6	40.8	42.9
Depreciation	0.8	1.8	1.9	2.1
Return on assets	0.0	2.3	2.3	2.2
MDBA & BRC contribution	2.0	6.8	6.2	6.2
Total	33.6	49.5	51.3	53.4

a Notional user share, per 2006 Determination.

Note: Totals may not sum due to rounding.

Source: NOW, December 2009 submission, p 51.

Alternative cost and price scenarios

- **NOW's submission provides 2 pricing scenarios:**
  - Scenario 1 – prices reflecting cost increases related to NOW's core water management activities only. These are the prices quoted in this appendix.
  - Scenario 2 – prices including cost increases of core activities + cost increases due to Commonwealth reform requirements (NOW proposes this pricing structure in the event that the Commonwealth does not fund it for the full cost of the reform requirements). Issues arising from this uncertainty are outlined in Section B.3.1 of this appendix.

Transaction fees for access licences and works approvals

- **NOW proposes:**
  - **To incorporate new licence types into its access licence and works approval fee schedule (**including floodplain harvesting licences, licenses with adaptive environmental conditions, Great Artesian Basin conveyance licences and tidal pool licences). These new licences would be subject to transaction charges and valley based prices.
  - **Significant increases to its transaction fees, ranging from about 20% up to 150%.**

B.2 Water management expenditure over 2006/07 to 2009/10

Over the current determination period (2006/07 to 2009/10), NOW's submission suggests that:

- actual **operating expenditure** will approximately match expenditure allowed by IPART in the 2006 Determination
- NOW is largely on track to meet the **capital expenditure** allowed by IPART.

Section B.10 provides more information on NOW's operating and capital expenditures over the current determination. These expenditure figures are significantly different to NOW's original 2006/07 and 2007/08 compliance reports. NOW has provided revised compliance reports for these years.

The PwC expenditure consultancy reviewed and made recommendations in relation to the efficiency and prudence of NOW's expenditure over the current determination period

B.3 Forecast water management expenditure over the upcoming determination period

B.3.1 Forecast operating expenditure

NOW's submission:

- Forecasts significant increases in its operating expenditure for its 'core' water management activities, with such expenditure forecast to increase by 16% over 2012/13. This forecast increase is comprised of a 14% increase in user share expenditure and a 24% increase in Government share of expenditure.

- Forecasts a significant increase in the natural resource management component of NSW's contribution to the MDBA, with this contribution forecast to increase from $3.7 million to $18.1 million (or 390%) from 2009/10 to 2010/11, and then decline slightly to $16.7 million and $15.1 million in 2011/12 and 2012/13, respectively. The user share of these costs is expected to increase from $1.7 million to $6.5 million (282%) from 2009/10 to 2010/11, and then decline slightly to $6.1 million and $5.9 million in 2011/12 and 2012/13, respectively.
- Lists potential 'additional' costs (of about $10.5 million per year) associated with implementing the *Commonwealth Water Act 2007*, in the event that the Commonwealth does not fund these additional costs. NOW notes that, based on the activities and cost sharing ratios, these costs would be split 81% users and 19% Government – if they are included in the determination.
- Foreshadows the need for it to recover the operation and maintenance costs that will be associated with the future installation of 2 significant metering programs (whose capital costs will be funded by the Commonwealth) at the next price determination. (Although it states that these costs will have to be provided for in this determination if a longer determination period than 3 years is set by IPART).

Section B.11 provides more information on NOW's forecast operating expenditure. Further information on the status of Commonwealth funding of NOW's additional costs is outlined below.

Additional costs associated with Commonwealth reform requirements

According to NOW, NSW is seeking to have the costs of additional water reform activities associated with implementation of the *Commonwealth Water Act 2007* funded by the Commonwealth, consistent with the 'no additional net cost' provisions in the 2008 Murray-Darling Basin Inter-Governmental Agreement (IGA). However, in the absence to date of a response from the Commonwealth, NOW has included the estimated costs of these activities (approximately $10.5 million per annum, based on the need for an additional 57 FTEs) in its submission as a separate cost item.

NOW argues that IPART's determination should allow it to recover any 'additional' costs of implementing the Water Act that the Commonwealth does not agree to fund.

B.3.2 Forecast capital expenditure

NOW is undertaking a range of capital projects over the forthcoming determination period. However, most of these comprise continued and new capital projects funded by third parties. Table B.2 lists NOW's forecast capital expenditure that will not be funded by third parties.

Table B.2 NOW 's capital expenditure requirements for the period 2010/11 to 2012/13 ($m, $2009/10)

	2010/11	2011/12	2012/13
Water Extraction Monitoring	1.1		
Corporate water database	0.1		
Upgrade/replacement of hydrometric network	0.2	2.0	2.0
Total	1.3[a]	2.0	2.0

[a] Total does not add due to rounding.

Source: NOW, December 2009 submission, p 45.

B.4 Regulatory framework for the 2011 determination

B.4.1 Length of determination period

NOW has requested a 3-year determination due to the uncertainties it faces with regard to the Commonwealth involvement in the Murray-Darling Basin. NOW notes that the Basin Plan is to be completed by 2012, at which time NOW's obligations will be clearer and the operational, maintenance and compliance costs associated with the Commonwealth projects will be able to be determined.

NOW argues that a period less than 3 years would impose significant costs on the agency, while a longer determination would require an adjustment mechanism for significant changes in expenditures which may be imposed by the Basin Plan in 2012.

Given NOW's proposed determination period, its submission provides forecast costs and prices only to 2012/13 (although its excel information returns to IPART include forecasts to 2014/15).

Due to the delay in the price review, NOW's prices will be determined and take effect from 1 July 2011. NOW was initially hopeful that IPART would determine new prices to apply from December 2010. However, this is in the middle of the irrigation season, and some stakeholders have previously advised that commencing a new price path at this time may be problematic. Another issue considered was alignment with the end date of the State Water Determination. IPART has set State Water's prices for 4 years, to 2013/14. The end date of the NOW determination is also scheduled for June 2014. We have considered the issues (for NOW and other stakeholders) associated with commencement and end dates for the upcoming NOW determination in making our decision.

B.4.2 Revenue to fund capital expenditure

In the past, NOW has not received a return on capital due to the small value of its capital expenditure. For this determination NOW argues for a return on capital, but its submission does not provide its proposed opening value of the regulatory asset base for 2010/11, the basis for this valuation and the justification for this approach. NOW's excel cost model shows an opening RAB value as at 1 July 2010 of $29.5 million ($09/10). We have decided to allow NOW a return on capital with a zero RAB commencing from 1 July 2011.

NOW proposes a 7.9% real pre tax WACC, with its justification based on State Water's submission to IPART. State Water argues that it faces higher volatility relative to other metropolitan water agencies, and therefore should receive a higher return. State Water also argues that it needs a higher WACC to remain financially viable. Notably, NOW's submission argues for 100% fixed charges, which would significantly reduce its revenue volatility.

NOW proposes that the return of and on capital would provide $4.4m in 2010/11, increasing to $4.8m in 2012/13.

B.4.3 Simplifying the billing process by removing the cap on bill increases

IPART's 2006 Determination included caps on the annual increase in bills. NOW argues for the removal of this cap on the following grounds:

- The cap is costly and time consuming for NOW to administer. For example, it faces administrative difficulties in separating a user's normal bill from the impacts of water allocation trading.
- The cap reduces incentives for water users subject to a two-part tariff to reduce their water use. For example, different usage from year to year can mean that under the two-part tariff, users receive a discount because their usage is higher in that year than the previous year. (Although, NOW's submission also proposes a move to fixed only charges, and hence abolition of its two-part tariffs.)

B.4.4 Water management activities

In the Issues Paper, IPART flagged that it intended to use the existing cost allocation ratios for each of the water management activities as the starting point for this review, as these have been developed and refined over 2 price determinations. Further, it noted that proposals for changes to the ratios should be supported by clear and detailed explanations for new ratios and activity codes.

In its submission, NOW proposes some changes to its activity cost codes. According to NOW, these changes are the result of:

- new services, which have not been provided in the past
- activities that were not previously classified, or
- the amalgamation or deletion of some past activities to better reflect the current focus.

However, according to NOW, it is not proposing changes to the cost share ratios. NOW assert that under its proposal the user share of activities have not been altered and where activities codes are merged, the weighted average of the users' share of the 2006 activities has been adopted. Appendix 4 of NOW's submission provides a matching of the old activity codes to each new activity. Notably, Appendix 4 omits a new code proposed by NOW (C09-04 'overheads for water consent transactions') and includes 2 new codes for which NOW has supplied no costs and for which NOW seeks no cost recovery (C03-2 and C03-03). For the purpose of IPART's analysis, the omitted code will be included and the new codes with no costs will be excluded.

For the 2006 determination, 60 activity codes were applied. Of these: 55 codes related to operating expenditure; 5 to capital expenditure; and 15 of these codes had a user share of zero. If NOW's proposal was accepted (and adjustments made for the omitted/no cost codes), 39 codes would be applied to the next determination. Of these: 34 codes would relate to operating expenditure; 5 to capital expenditure; and 2 would have a zero cost share.

In the course of PwC's interviews with NOW, it was clear that the Determination's somewhat complex system of activity codes is not utilised for internal management reporting and that budget forecasts and expenditure reports for the activities include some arbitrary allocations.

Preliminary analysis undertaken by IPART illustrates that if an objective is to encourage NOW to focus its internal management attention on improving the effectiveness and efficiency of its regulated water activities, some further rationalisation may be beneficial. IPART notes that:

- 18 of the 34 operating expenditure related water management activities each contain less than 2% of NOW's forecast operating expenditure.
- Whereas the forecast expenditure for just 7 codes make up almost 60% of NOW's total expenditure.[151]
- One code (C07-02 'operational planning') contains more than 10% of NOW's forecast operating costs.

[151] The 7 codes are: C01-01 'surface water quantity monitoring'; C02-01 'groundwater monitoring'; C06-03 'plan performance monitoring and reporting'; C07-1 'water sharing plan development'; C07-02 'operational planning': C09-01 'licence administration'; and C09-03 'licence compliance'.

IPART has decided to adopt NOW's cost codes albeit with some modifications to correct errors made by NOW. IPART has sought to achieve a balance between: providing transparency about the nature and purpose of expenditure; and improving the practicality of implementation and reporting by NOW.

B.4.5 Linking price and performance

In the course of the 2006 review, a key concern of stakeholders was the need to ensure that the Department is accountable for its expenditure and activities. In the Final Report, IPART put in place arrangements for the annual reporting of expenditure and other matters. Unfortunately, NOW has not complied with these requirements in a timely fashion (and has recently revised its compliance data). This has been a matter of concern to IPART and NOW's stakeholders. Further, it is noted that over the course of the 2006 Determination period, the Audit Office and the National Water Commission have expressed disappointment in NOW's performance (in relation to aspects of the price regulated water management activities) on more than one occasion. This suggests that there is a need for incentives and that there could be benefit in focusing on improvements in reporting requirements and/or other measures to improve service performance.

In the Issues Paper for this review, IPART flagged that it would consider setting measures or performance indicators for NOW and that it would investigate options to strengthen the link between prices and performance. In its submission, NOW proposed a range of output/KPI measures. The KPI/output measures proposed by NOW are included in Appendix 1 of the submission. NOW has not proposed a mechanism to link these output/KPI measures to prices or other mechanisms to link price and performance. These measures were reviewed by PwC as part of that consultancy. PwC recommended a range of performance indicators to enable an assessment of NOW's efficiency and effectiveness in the delivery of its monopoly services. The recommended performance indicators also reflect future management costs and forecast expenditure priorities of NOW.

The Issues Paper flagged that, in making decisions about future mechanisms, IPART would consider:

- the potential incentives (positive and negative) that could be provided
- the importance of distinguishing between 'under-expenditure' due to under-performance and lower expenditure due to efficiency gains
- the ease or difficulty of measuring performance, including the extent to which WAMC's activities an be clearly defined
- mechanisms used by other economic regulators.

We note that the Cambridge Economic Policy Associates (CEDA) report recently published by IPART includes examples of incentive regulation that were considered in IPART's deliberations of this issue. The CEDA report includes an assessment of the mechanisms used by a range of other economic regulators to link price and

performance. It includes a number of examples of determinations that link a defined percentage of revenue to performance, as measured by service standards or a basket of output measures by the regulator.

We have compiled a table of NOW's Monopoly Service Order outputs in order to determine whether NOW is delivering the services that it stated it would provide in its submission to the 2011 review.

B.5 Projected revenue to be recovered from users Vs the broader community/Government

NOW proposes full cost recovery of the user share of its revenue requirement. Under NOW's proposal, revenue from users would increase from $29.23 million in 2006 (as determined by IPART) to $49.5 million in 2010/11 and then $53.4 million in 2012/13. NOW's proposed water management revenue requirements and the split of these requirements between users and the Government is listed in Table B.3 below.

Table B.3 NOW's revenue requirements for the upcoming determination ($2009/10, million)

	2010/11	2011/12	2012/13
User share of revenue needs	49.5	51.3	53.4
Govt share of revenue needs	23.5	24.1	23.7
Revenue needs	73.0	75.3	77.0

Note: Excludes any 'additional' cost to NOW of implementing the Commonwealth Water Act (as per IGA). Totals may not sum due to rounding.

Source: NOW, December 2009 submission, p 48.

In 2006, when calculating the notional revenue requirement and the split of costs between users and the Government, IPART attributed approximately 65% of NOW's costs to users. However, after considering the factors contained in Section 15 of the Act, IPART set prices so that expected revenue from users was less than this – although prices were set to gradually increase towards full cost recovery. For this determination, NOW proposes that prices be set to fully recover users' share of its water management costs.

The sources of NOW's user share revenue requirement (and hence its proposed price increases) are listed in Table B.1 above.

B.6 Consumption forecasts and entitlement basis

B.6.1 Consumption forecasts for regulated rivers

In the 2006 Determination, IPART applied long-term extraction forecasts extracted from NOW's IQQM. At that time, IPART decided that, given deficiencies in metering data, IQQM data was more accurate than State's Water information on actual consumption/extraction.

Based on the advice received from CIE, in conjunction with State Water, NOW argues that consumption forecasts for Regulated rivers should be based on the average of the extractions from the last 15 years. This is because this method:

- is likely to be more accurate
- accounts for climate change
- reduces price volatility between price determinations
- will allow low recent consumption to be better reflected in prices.

We note that:

- for the Final Report of the State Water price review, IPART decided to use a 20-year moving average of IQQM and actual (or metered) extractions to forecast water consumption for regulated rivers
- consumption forecasts will not be relevant if IPART adopts NOW's preferred pricing structure of 100% fixed (per entitlement) charges.

B.6.2 Entitlement/consumption forecasts for unregulated rivers and groundwater

For the 2006 Determination, metered or other estimates of extractions were not available as a large number of licensees are unmetered. At that time, IQQM data was only available for a small number of unregulated rivers and groundwater sources. This situation remains.[152]

For the 2006 Determination, forecasts were based on entitlements. In its 2009 submission, NOW has provided entitlement volumes for unregulated rivers and groundwater sources. It has not provided consumption forecasts for unregulated rivers and groundwater sources.

Unregulated rivers

NOW notes that very little unregulated river water is metered – therefore, under the 2006 Determination, the majority of unregulated river users paid only a fixed (per entitlement) charge – rather than the two-part (fixed and usage) tariff. Leaving aside

[152] Email Chris Ribbons, NOW 3 February 2009.

major water utilities in the Hunter and Sydney, NOW reports that approximately 80% of unregulated river water entitlements are currently subject to a one-part (fixed per entitlement) tariff. Including the major utilities in the Hunter and Sydney, this figure changes to 42%.

NOW recognises, however, that with the roll out of meters across the Hawkesbury-Nepean and potentially the Murray-Darling Basin over the next few years, there will be a progressive increase in metered extractions from unregulated rivers.

Analysis by IPART of the information provided by NOW highlights:

- Inconsistencies between the entitlements reported in the submission and in the excel information return for 2 of the valleys.
- A lack of explanation for changes between the entitlement data used in the 2006 Determination and that included in the 2009 submission (eg, increases in entitlement in 5 valleys). The Secretariat sought further information from NOW to inform its analysis.

In addition, both Hunter Water and the Sydney Catchment Authority made submissions to IPART that argued that the entitlement volumes reported by NOW for the major utilities should not be used for pricing purposes. Our decision was to charge these utilities based on these entitlement volumes in order to ensure consistency with other users.

Groundwater

For the 2006 review, information on metered groundwater extractions or IQQM data was not available, as a large number of licensees are unmetered and IQQM data was only available for a small number of groundwater sources. This situation remains.

For the 2006 Determination, forecasts were based on entitlements, which were the subject of revision and debate between the Draft Report and the Final Report. In its 2009 submission, NOW has provided entitlement volumes for groundwater sources.

NOW's submission notes that implementation of water sharing plans for groundwater sources is continuing and that entitlements are progressively decreasing. It notes that to allow groundwater users time to adjust to reduced entitlements, supplementary entitlements have been granted in some systems. The supplementary entitlements will be phased out by June 2017.

Analysis by IPARTof the information provided by NOW highlighted:

- Inconsistencies between the entitlements reported in the submission and in the excel information return for the South Coast.
- Between the 2006 Determination and 2009, entitlements for the 8 inland groundwater sources have reduced (by between 35% and 80%). While these reductions are explained by NOW in its submission, explanations for increases in entitlement (of between 8% and 260%) for the 3 coastal valleys and the Far West have not been provided. Further information was sought from NOW.
- There are significant variations in the extent to which the supplementary allocations compensate users in different valleys for reductions in entitlement. Further, while not highlighted by NOW, significant reductions in entitlements will be required over future determination periods for at least 3 of the inland sources, if entitlement volumes are not to exceed the water sharing plan limits.

These factors were considered by IPART in establishing groundwater prices.

B.7 Water management charges

B.7.1 Price structure

NOW proposed the following changes to its water management charges:

- Lifting the 2006 Determination cap on price and bill increases.
- The amalgamation of groundwater valleys into 2 areas: inland and coastal. According to NOW, this recognises that groundwater aquifers overlap a number of valleys and that the cost drivers are not valley based but more closely aligned to the inland and coastal divisions. NOW notes that this change will cause price shifts leading to noticeable variability in price rises between valleys in the first year.
- A 100% fixed (per entitlement) charge regime, but with consideration of a 70:30 fixed/variable pricing structure "as a minimum". NOW argues for a 100% fixed charge regime on the following grounds:
  - its costs don't vary with the volume of water consumed. In fact, costs actually increase when water is scarce
  - the 2-part tariff was used in the past to send a price signal to reduce consumption. This is no longer necessary, since 90% of commercial water extraction is covered by water sharing plans and therefore open to trading of water – which is more effective in improving efficiency in water consumption than the prices charged by NOW
  - fixed charges prevent any actual or perceived conflict of interest arising through a link between revenue and the amount of water made available to users

- Setting prices to recover 100%of user costs (at the 2006 Determination, IPART set a price path to recover approximately 98% of regulated river user costs, 88% of unregulated river user costs, and 75% of groundwater user costs by 2009/10).

B.7.2 Pricing scenarios

NOW's submission provides 2 pricing scenarios:

- Scenario 1 – prices reflecting cost increases related to NOW's core activities only
- Scenario 2 – prices including cost increases of core activities + cost increases due to Commonwealth reform requirements (NOW proposes this pricing structure in the event that the Commonwealth does not fund it for the full cost of its reform requirements).

For each of these scenarios, NOW's submission presents prices for its proposed approach of 100% of its revenue recovered via fixed charges, as well as its alternative option of a 70/30 split between fixed and variable charges on regulated rivers. The prices for Scenario 1 are listed in Section B.12.

The figures in Section B.12 show that NOW is proposing significant price increases – ie, increases of well over 100% over 2009/10 to 2012/13 for several valleys. Under NOW's proposal, prices would increase greatest in 2010/11, with much smaller increases in 2011/12 and 2012/13.

These tables also show that NOW supports the maintenance of an annual minimum charge of $60 (as set by IPART in 2006).

B.8 Impacts of water management charges

B.8.1 Impact on bulk water users

Section B.12 lists indications of the percentage increase in prices and hence bills to water users, under NOW's pricing proposal. This shows that, in percentage terms at least, NOW's proposed prices would result in significant increases in bills, and that these increases vary substantially depending upon the region and water source.

IPART has assessed the impact of NOW's prices taking into account our determination of State Water's prices.

NOW acknowledges that the percentage increases proposed in its submission are extremely high. However, it argues that:

- Bulk water costs as a percentage of total farm costs are relatively small, representing between 0.8% to 4.7% of total farm costs.
- The proposed price rises should be considered in light of the value of water to irrigation businesses. NOW is generally proposing price rises of between approximately $1 and $5 per ML over 2009/10 to 2012/13, whereas:
  - on the water market "the price per ML of allocation water typically varies in the range of $200 to $2,000/ML, depending on location, security and climatic conditions"
  - in terms of returns generated from water use, Industry & Investment NSW has found typical returns are $155 per ML for cotton, $121 per ML for other summer crops, $205 per ML for canola, $66 per ML for other winter crops and, depending on which cropping system and which region of the State, $39 - $181 per ML for lucerne, $181-$329 per ML for rice and $66-$429 per ML for wheat.

We have explored the following issues in an attempt to assess the impact of price changes on customers:

- The profile of customers. Different customer profiles exist both across regions and within regions. A great variation exists in terms of the size of water entitlements and use, the end use of water, and the viability or profitability of water users' operations. For example, a 200% increase in a water user's bill from NOW could have little impact on the viability of that user's farm; alternatively it could significantly undermine or threaten viability. We have examined reports from ABARE and other agencies in order to gain a better assessment of impact.
- The potential impact of NOW's proposed move to fixed prices from the existing two-part tariff structure. This presents significant questions as to the risks borne by customers, especially in the light of the high variability in rainfall experienced in some regions.
- The ability of bulk water users to mitigate or respond to the impact of higher prices (eg, by reducing water use if there is a usage charge and/or by trading water entitlements where it is economic to do so).

B.8.2 Impact of IPART's determination on NOW

Given that NOW is a Government department rather than a State Owned Corporation; IPART's standard methods for assessing the impact of its pricing determination on the regulated body may not be applicable. We have therefore considered ways to assess the potential impact of IPART's determination on NOW. We have also considered risks to NOW associated with IPART's determination (eg, risks to revenue if there is significant revenue tied to usage charges), and potential ways to mitigate or respond to these.

B.9 Transaction fees for water consents

As outlined below, NOW proposes significant increases to its fees for licence transactions, ranging from about 20% up to 150%. It also proposes to incorporate new licence types into its licence and approval schedule.

B.9.1 Proposed fees

Based on the marginal cost of licence transactions, IPART's 2006 determination set licence fees to recover a total of $11.2 million over the determination period. However, NOW reports that its actual costs of undertaking licence transactions over this period has been $24.3 million, of which $9.2 million was recovered through fees.

NOW therefore proposed significant increases to its licence transaction fees (see Table B.4). According to NOW, this fee schedule, which is based on NOW's estimate of its marginal costs of undertaking the transactions, is expected to return an average of $5,650,000 per year – which is close to recovering the predicted costs (of about $5.8 million per annum).

For this review, we have examined:

- NOW's estimates of its marginal costs of undertaking its licence/approval transactions.
- NOW's forecast number of transactions.

Table B.4 Proposed Water Consent Fees

Sample Fees	Current fees	Proposed fees	Change
New zero share licence	$116.68	$292.60	151%
New specific purpose licence 20ML	$487.37	$585.20	20%
New other licence 50ML	$999.17	$1,287.44	29%
GW Dealing 20ML	$487.37	$760.76	56%
GW Dealing 100ML	$1,852.17	$2,633.40	42%
Approval 100mm pump (19 L/s)	$1,018.13	$1,353.36	33%
Approval 150mm pump (60 L/s)	$1,047.13	$1,452.84	39%
Approval 300mm pump (265 L/s)	$1,641.63	$3,492.27	113%
Approval 10 Ha	$1,018.13	$1,353.36	33%
Approval 40 Ha	$1,283.03	$1,967.82	53%
Approval 100 Ha	$1,812.83	$3,196.74	76%
Approval farm dam	$1,470.25	$1,938.56	32%
Approval 100mm pump +10 ha	$1,018.13	$1,353.36	33%
Approval 150mm pump +40 ha	$1,312.03	$2,067.30	58%
Approval 300mm pump +100 ha	$2,436.33	$5,335.65	119%
Approval BLR bore	$116.68	$263.34	126%
Approval production bore	$1,018.13	$1,353.36	33%
Approval extension	$116.68	$234.08	101%

Source: NOW submission, p 86.

B.9.2 Incorporation of additional new types of licences

As outlined below, NOW proposed to add 4 new licences to its transaction fee schedule.

Flood plain harvesting licences

According to NOW, these licences are progressively being issued by the State, and it will be required to manage the implementation and enforcement of this licensing system. It therefore considers that these licences should be subject to the same application fees as other water management licences.

Licences with adaptive environmental conditions

These licences (more commonly referred to as environmental licences) are created through direct purchase of existing licensed entitlements or through water infrastructure projects that provide water savings that are then converted into an environmental licence. According to NOW, where the environmental licence originates from an existing licence (ie, by direct purchase of an existing licence or an on-farm saving under an existing licence), it retains the category and the

characteristics of the original licence. Where the environmental licence originates from a water supply system saving, the licence category applied will be an existing category that best reflects the characteristic of the water saving.

Great Artesian Basin conveyance licences

The water sharing plan for the Great Artesian Basin was gazetted in 2008. The plan provides for the introduction of domestic and stock (conveyance) access licences in 2013, for conveying water through open-bore drains. These licences will apply to water lost in the process of conveyance. They will be specific purpose access licences, which are non tradeable. When the bore is capped and piped, the conveyance licence will be cancelled.

These conveyance access licences will have a volumetric share component, which will be determined through calculating the average water lost in a given year. According to NOW, an annual water management charge based on this volume should then be applied.

NOW reports that this charge will enable it to recover some of the cost of managing the impacts of water wastage in open drains, and also provide an additional incentive for landholders to pipe water.

Tidal Pool Licences

Unlicensed water extractions from the tidal pools of a number of coastal river systems have been occurring over many years. NOW intends to bring these users into the licensing system where these extractions were previously exempted from requiring a licence under the Water Act. NOW says that it will be increasing its monitoring of water quantity and quality in these tidal pools.

B.10 NOW's water management expenditure over 2006/07 to 2009/10

Operating expenditure (2006/07 to 2009/10)

Table B.5 lists NOW's actual operating expenditure against operating expenditure 'allowed' by IPART at the 2006 determination. This shows that over the current determination period, NOW's expenditure on water management activities was:

- 6% greater on regulated rivers than allowed for by IPART
- 5% less on unregulated rivers than allowed for by IPART
- 3% less on groundwater than allowed for by IPART
- overall, about the same as allowed for by IPART (on the whole, NOW's expenditure was $0.22 million less than allowed for by IPART).

In discussing variances from budgeted costs (at both an aggregate level and a valley by valley level), NOW's 2008/09 compliance report (as tabled at the IPART's 3 February meeting) notes that:

- During 2006/07 and 2007/08, the Office of Water went through a process of restructuring (shifting from DNR to DWE), which gave rise to budget uncertainty, causing some decrease in total expenditure in those 2 years.
- Revenue from water users has been lower than expected, due to lower than expected water availability and hence sales (NOW's submission notes that revenue from water users was $19.4 million less than forecast over the regulatory period).
- The activity model is too detailed and the combinations arising from the valley by valley water source approach too numerous for any meaningful explanation of individual variances to be determined at this level, however some variances will be inevitable and have arisen due to a range of unforeseen circumstances.
- For example, in 2006 the implications of the Commonwealth Water Act were unknown and the COAG water reform processes had not been introduced. It is also extremely difficult when performing some tasks for the first time, such as Water Sharing Plans, to accurately predict the complexity of each task at the valley level.
- The drought has influenced priorities and required a flexible response in terms of water management activities.
- NOW no longer conducts its operations on a regional basis and all activities and resources are managed on a state-wide basis.

Notably, the figures in Table B.5 relate to NOW's total water management operating expenditure. According to NOW's submission, its **user share** of actual operating expenditure has been greater than allowed for by IPART at the 2006 Determination. Based on activities actually undertaken over the current determination period, NOW's submission states that:

- for regulated rivers, user share of operating expenditure is $13.1 million greater than allowed for by IPART when setting prices in 2006
- for unregulated rivers, user share of operating expenditure is $1.1 million greater than allowed for by IPART when setting prices in 2006
- for groundwater, user share of operating expenditure is $0.7 million greater than allowed for by IPART when setting prices in 2006.

The PwC Report provided further information to IPART and stakeholders about expenditure and variations.

Table B.5 NOW's operating expenditure (2006/07 to 2009/10), excluding MDBA and BRC costs ($2009/10)

	2006/07	2007/08	2008/09	2009/10	Total
Regulated river					
Allowed	18,457	18,991	18,674	18,244	74,366
Actual	17,180	19,820	20,128	21,418	78,546
Difference	-1,277	829	1,455	3,174	4,180
Difference %	-7%	4%	8%	17%	6%
Unregulated river					
Allowed	15,507	15,298	16,488	15,550	62,843
Actual	15,255	14,069	15,928	14,680	59,932
Difference	-252	-1,229	-560	-870	-2,911
Difference %	-2%	-8%	-3%	-6%	-5%
Groundwater					
Allowed	12,192	11,963	11,669	11,461	47,285
Actual	9,733	9,826	13,526	12,711	45,796
Difference	-2,459	-2,137	1,857	1,250	-1,489
Difference %	-20%	-18%	16%	11%	-3%
Total					
Allowed	46,156	46,252	46,831	45,256	184,494
Actual	42,168	43,715	49,582	48,809	184,274
Difference	-3,988	-2,537	2,751	3,554	-220
Difference %	-9%	-5%	6%	8%	0%

Source: NOW's excel information return, 24 December 2009.

Capital expenditure (2006/07 to 2009/10)

NOW's submission reports that actual capital expenditures exceeded its forecasts in the 2006 price review by approximately $7 million, largely due to a stated variation of $7.3 million on groundwater monitoring over the period. NOW states that in reaching this conclusion it compared the forecasts provided in its submission to the 2006 price review, rather than the "data information upon which the 2006 pricing determination was based."

However, this does not reconcile to IPART's records or Final Report. Table B.6 compares actual capital expenditure to that allowed in the 2006 Determination, as per IPART's 2006 Report. IPART's 2006 Report states that it accepted NOW's forecast capital expenditure of approximately $9 million ($2006/07) over the determination period. Therefore, as shown in Table B.6, the total over spend for the period (relative to IPART's 2006 Determination) was only $0.4 million ($2009/10).

Table B.6 Actual expenditure compared to 2006 Determination forecasts ($ million, 2009/10)

	2006/07	2007/08	2008/09	2009/10	Total
2006 Determination	4.7	4.3	0.9	0.0	9.9
Actual	1.3	2.4	3.4	2.9	10.1
Variation	(3.4)	(1.8)	2.5	2.9	0.2

Source: NSW Office of Water, submission to IPART, December 2009 updated for 9 March 2010 email.

Table B.7 shows the actual expenditure by category reported by NOW for the period ($ nominal). In the 2006 Determination, NOW forecast its capital expenditure based on 2 programs, metering and data systems and groundwater monitoring networks. As noted above, IPART's decision in the 2006 Determination was to accept these forecasts. In addition to these programs in 2006, NOW has also added a program on corporate water databases, which was not included in the allowed capital expenditure for the period. PwC determined that the corporate water database program is prudent and efficient.

Table B.7 NOW reported capital expenditure ($ million, nominal)

	2006/07	2007/08	2008/09	2009/10	Total
Groundwater Monitoring	0.8	2.0	3.0	1.7	7.5
Metering & data systems	0.0	0.2	0.2	0.9	1.3
Water database	0.4	0.1	0.1	0.3	0.9
Total capital expenditure	1.2	2.3	3.3	2.9	9.7

Source: NSW Office of Water, submission to IPART, December 2009, p 21.

We note that examination of capital expenditure was complicated by the need to ensure that capital initiatives funded through government grants are excluded from the analysis of NOW's revenue requirement. NOW's submission identified a large number of assets that have been funded by the Commonwealth or other sources over the period. The value of contributed assets exceeds NOW's reported actual capital expenditure. Some examples of contributed assets cited in the submission are listed in Table B.8. It is understood that this is not a complete account of all contributed assets over the period.

PwC's report provides further information on the efficiency and prudency of NOW's actual expenditure, reasons for variations from the 2006 Determination values, and the separation/identification of contributed assets.

Table B.8 Examples of capital grants received by NOW from Commonwealth or other sources ($ million, nominal)

	2006/07	2007/08	2008/09	2009/10
Bureau of Meteorology funding		2.90	1.80	3.60
C'wth hydrometric network			2.00	2.00
NSW groundwater funding			0.30	0.37
NSW groundwater funding				0.71

Source: NSW Office of Water, submission to IPART review of bulk water prices, December 2009, pp 11-12.

B.11 NOW's forecast operating expenditure over the upcoming determination period

Forecast water management operating expenditure – core activities

Table B.9 lists NOW's forecast operating expenditure for its 'core' water management activities. This shows that, relative to the last year of the current determination period (2009/10), operating expenditure is forecast to increase by 16% by 2012/13. This is comprised of a 14% increase in user share expenditure and a 24% increase in Government share of expenditure.

NOW's forecast operating expenditure primarily relates to full-time equivalent staff (FTEs). According to NOW, it currently has 256 FTEs undertaking water management activities, and it will require an additional 47.5 FTEs by 2013 (thus increasing its FTEs engaged in water management by 18.6%.

NOW's submission outlines the activities that the additional 47.5 FTEs will be employed in (section 5.3, pages 39 to 42). However, it does not sufficiently explain or justify its current water management staffing level (256 FTEs). That is, the submission appears to start from the position that its current water management staffing level is efficient and justified.

Further, the PwC expenditure review has revealed that there is uncertainty over NOW's baseline FTE number of 256. It appears that this number may be NOW's assessment of its resource needs (less 20%, to account for staff turnover), rather than actual FTEs currently undertaking IPART regulated activities. The PwC report recommended a reduction of 23 FTEs resulting in a baseline figure of 233 FTEs.

NOW's submission notes that it is planning for an efficiency saving in its overhead and indirect costs of 4% in 2010 and a further 4% in 2011 – which have been incorporated into the cost projections. This is the only reference to efficiency savings in NOW's submission.

Table B.9 NOW's Forecast operating expenditure ($2009/2010 million), excluding MDBA/BRC costs

Water source	2009/10	2010/11	2011/12	2012/13	% change over period
Regulated rivers					
User share	15.0	15.4	16.3	17.1	14%
Government share	6.3	6.4	7.0	7.4	18%
Total	21.3	21.8	23.3	24.5	15%
Unregulated rivers					
User share	10.9	11.4	12.3	13.0	19%
Government share	3.7	3.9	4.6	5.0	35%
Total	14.6	15.3	16.9	18.0	23%
Groundwater					
User share	11.6	11.8	12.2	12.7	9%
Government share	1.3	1.2	1.5	1.6	23%
Total	12.9	13.0	13.7	14.3	11%
Total opex					
User share	37.5	38.6	40.8	42.8	14%
Government share	11.3	11.5	13.1	14.0	24%
Total	48.8	50.1	53.9	56.8	16%

Source: NOW submission to IPART, December 2009 p.43.

Murray-Darling Basin Authority (MDBA) and Border Rivers Commission forecast costs

According to NOW (and State Water), the natural resource management component of the NSW contribution to the MDBA has increased significantly compared to the 2006 Determination. Table B.10 shows that NSW's share of the MDBA's water management activities amounted to $3.7 million in 2009/10, but that this will increase to $18.1 million in 2010/11 and slightly less for subsequent years, with the total NSW contribution expected to be unchanged. In 2009/10, $1.7m of MDBA water management costs were sought from water users, but for 2010/11 NOW proposes to pass on $6.5 million through water charges, with the balance of $11.6 million to be funded by the NSW Government. NOW suggests that these higher MDBA costs to be recovered via NOW rather than State Water charges reflect the MDBA's increased focus on resource management.

Table B.10 shows that BRC costs are forecast to remain relatively stable.

Table B.10 MDBA and BRC costs for the period 2010/11 to 2012/13 ($million, $2009/10)

Water source	2009/10	2010/11	2011/12	2012/13
MDBA				
Regulated rivers				
User share	1.7	4.9	4.7	4.6
Government share	2.0	10.5	9.3	7.9
Total	3.7	15.4	14.0	12.5
Unregulated rivers				
User share	0	0.4	0.4	0.4
Government share	0	0.5	0.5	0.5
Total	0	0.9	0.9	0.9
Groundwater				
User share	0	1.2	1.0	0.9
Government share	0	0.6	0.8	0.8
Total	0	1.8	1.8	1.7
Total MDBA program	3.7	18.1	16.7	15.1
BRC				
Regulated rivers				
User share	0.2	0.2	0.1	0.1
Government share	0.1	<0.1	0.1	0.1
Total	0.3	0.2	0.2	0.2
Unregulated rivers				
User share	0.1	0.1	0.1	0.1
Government share	0.1	0.1	0.1	0.1
Total	0.2	0.2	0.2	0.2
Groundwater				
User share	<0.1	<0.1	<0.1	<0.1
Government share	0.0	0.0	0.0	0.0
Total	<0.1	<0.1	<0.1	<0.1
Total BRC program	0.5	0.4	0.4	0.4

B.12 NOW's proposed prices reflecting cost increases in core activities (Scenario 1 in NOW's submission)

Regulated river prices

Table B.11 shows NOW's proposed regulated river prices over 2010/11 to 2012/13. The minimum percentage increase over 2009/10 to 2012/13 relates to a user currently consuming 100% of their entitlement; while the maximum percentage increase relates to a user currently consuming 0% of their entitlement (ie, they are currently only paying a fixed charge, rather than a fixed + usage charge).

Table B.11 Tariffs on regulated rivers, 100 % fixed (per entitlement) charges from 2010/11 onwards ($2009/10)

	2009/10 price range[a]		2010/11	2011/12	2012/13	Range of % increase	
Minimum bill - $pa		60	60	60	60		0%
Entitlement Charge ($/ML)	**Min**	**Max**				**Min**	**Max**
Border - $/ML	1.40	3.03	3.47	3.6	3.66	21%	161%
Gwydir - $/ML	0.78	1.70	2.17	2.25	2.34	38%	200%
Namoi - $/ML	1.21	2.67	4.05	4.29	4.43	66%	266%
Peel - $/ML	1.17	3.29	4.77	5.1	5.21	58%	345%
Lachlan - $/ML	0.97	2.09	2.89	3.06	3.21	54%	231%
Macquarie- $/ML	0.97	2.29	2.81	2.95	3.08	34%	218%
Murray - $/ML	1.38	1.76	2.56	2.6	2.69	53%	95%
Murrumbidgee - $/ML	1.04	1.30	2.16	2.19	2.29	76%	120%
North Coast - $/ML	2.99	5.00	6.85	7.42	8.03	61%	169%
Hunter - $/ML	1.23	2.44	6.34	6.78	7.03	188%	472%
South Coast - $/ML	2.97	4.96	7.1	8.06	8.49	71%	186%

a The minimum charge is the fixed (per entitlement) charge only (ie, it assumes a user is actually extracting none of their entitlement and is therefore not paying a usage charge). The maximum charge assumes a user is currently extracting 100% of their entitlement (ie, they are paying a fixed charge per entitlement + a usage charge for their full entitlement).

Table B.12 lists NOW's proposed regulated river prices for a 70/30 split between fixed (per entitlement) and usage (per ML extracted) charges. Increases in fixed (per entitlement) charges range from 58% for the Murray to 300% for the Hunter; while increases in usage charges range from 21% for the Border region to 215% in the Peel. According to NOW, the large increases in the North Coast and Peel are due to low user numbers and low levels of cost recovery in the 2006 Determination.

Table B.12 Tariffs on regulated rivers, 70/30 split between fixed and variable charges from 2010/11 onwards ($2009/10)

	2009/10	2010/11	2011/12	2012/13	Total % increase
Minimum bill - $pa	60	60	60	60	0%
High Security and General Security Entitlement Charge ($/ML)					
Border - $/ML	1.40	2.43	2.52	2.56	83%
Gwydir - $/ML	0.78	1.52	1.57	1.64	110%
Namoi - $/ML	1.21	2.84	3.00	3.10	156%
Peel - $/ML	1.17	3.31	3.56	3.63	210%
Lachlan - $/ML	0.97	2.02	2.14	2.24	131%
Macquarie- $/ML	0.97	1.96	2.06	2.16	123%
Murray - $/ML	1.38	2.07	2.1	2.18	58%
Murrumbidgee - $/ML	1.04	1.84	1.86	1.94	87%
North Coast - $/ML	2.99	6.37	6.81	7.49	151%
Hunter - $/ML	1.23	4.44	4.74	4.92	300%
South Coast - $/ML	2.97	5.62	6.43	6.78	128%
Usage charge					
Border - $/ML	1.63	1.87	1.93	1.97	21%
Gwydir - $/ML	0.92	1.26	1.30	1.35	47%
Namoi - $/ML	1.46	1.89	2.00	2.07	42%
Peel - $/ML	2.12	6.21	6.52	6.68	215%
Lachlan - $/ML	1.12	2.65	2.82	2.95	163%
Macquarie- $/ML	1.31	2.10	2.21	2.31	76%
Murray - $/ML	0.38	0.82	0.83	0.86	126%
Murrumbidgee - $/ML	0.27	0.50	0.51	0.53	96%
North Coast - $/ML	2.01	5.45	7.00	6.00	199%
Hunter - $/ML	1.21	3.06	3.29	3.41	182%
South Coast - $/ML	1.99	3.85	4.26	4.46	124%

Unregulated river pricing

Table B.13 lists NOW's proposed prices for unregulated rivers.[153] The minimum percentage increase over 2009/10 to 2012/13 relates to a user currently subject to a fixed price only or a user subject to a 2-part tariff who is currently using 100% of their

[153] Unregulated river users are currently billed under several different tariff structures:
- an entitlement plus usage charge for town water, industry and recreation;
- an entitlement only charge for irrigators, unless they have a satisfactory meter installed and opt to be subject to a two-part tariff (although NOW report that "there has almost been no take-up of this option"); and
- for a small number of irrigators, a charge on a per hectare basis – although this is being phased out.

entitlement; while the maximum percentage increase over this period relates to a user who is currently subject to a 2-part tariff but is actually using none of their entitlement. (Under the current unregulated river pricing structure, the entitlement charge under the one-part tariff is greater than the entitlement charge under the two-part tariff.)[154]

Table B.13 Tariffs on unregulated rivers, 100 % fixed (per entitlement) charges from 2010/11 onwards

	2009/10 price range[a]		2010/11	2011/12	2012/13	Range of % increase	
Minimum bill - $pa	60		60	60	60	0%	
Entitlement charge replace two-part tariff	**Min**	**Max**				**Min**	**Max**
Border - $/ML	1.68	2.78	5.03	5.43	5.89	112%	251%
Gwydir - $/ML	1.68	2.78	5.03	5.43	5.89	112%	251%
Namoi - $/ML	1.68	2.78	5.03	5.43	5.89	112%	251%
Peel - $/ML	1.68	2.78	5.03	5.43	5.89	112%	251%
Lachlan - $/ML	2.98	4.95	7.79	8.19	8.66	75%	191%
Macquarie - $/ML	2.98	4.95	7.79	8.19	8.66	75%	191%
Far West - $/ML	3.51	5.78	5.34	5.87	6.17	7%	76%
Murray - $/ML	3.08	5.12	7.83	8.58	9.44	84%	206%
Murrumbidgee - $/ML	3.71	6.18	13.61	15.07	16.8	172%	353%
North Coast - $/ML	4.14	6.87	8.17	8.94	9.82	43%	137%
Hunter - $/ML	2.75	4.57	2.66	2.84	3.03	-34%	10%
South Coast - $/ML	2.15	3.59	2.9	3.14	3.3	-8%	53%
Irrigation tariffs for licences based on area ($/ha)							
Far West $/ML	27.07		41.19	45.23	47.54	76%	

a: The minimum charge is the fixed (per entitlement) charge only of the current two-part tariff (ie, it assumes a user is subject to the 2-part tariff, but is actually extracting none of their entitlement and is therefore not paying a usage charge). The maximum charge assumes a user is currently subject to the one part (fixed charge only) tariff or is subject to the 2-part tariff and is consuming 100% of their entitlement.

[154] Unregulated river users are currently billed under several different tariff structures:

- an entitlement plus usage charge for town water, industry and recreation;
- an entitlement only charge for irrigators, unless they have a satisfactory meter installed and opt to be subject to a two-part tariff (although NOW report that "there has almost been no take-up of this option"); and
- for a small number of irrigators, a charge on a per hectare basis – although this is being phased out.

Groundwater pricing

Table B.14 lists NOW's proposed groundwater prices. The minimum percentage increase over 2009/10 to 2012/13 relates to users currently subject to a 2-part tariff (fixed per entitlement + usage); while the maximum percentage increase over this period relates to users currently only subject to the fixed charge.[155]

As noted in this brief, NOW's submission proposes only 2 sets of groundwater prices: inland and coastal. Under the proposal the Hunter, North Coast and South Coast are considered coastal regions, and all remaining regions are classified as inland. This represents a significant change to the current regional pricing structure.

Table B.14 Groundwater tariffs, 100% fixed (per entitlement) charges from 2010/11 onwards

	2009/10 price range[a]		2010/11	2011/12	2012/13	Range of % increase	
Minimum bill - $pa	60		60	60	60	0%	
Entitlement Charge ($/ML)	**Min**	**Max**				**Min**	**Max**
Border - $/ML	2.47	3.71	8.78	8.81	9.28	150%	276%
Gwydir - $/ML	2.47	3.71	8.78	8.81	9.28	150%	276%
Namoi - $/ML	2.47	3.71	8.78	8.81	9.28	150%	276%
Peel - $/ML	2.47	3.71	8.78	8.81	9.28	150%	276%
Lachlan - $/ML	3.06	4.64	8.78	8.81	9.28	100%	203%
Macquarie- $/ML	3.06	4.64	8.78	8.81	9.28	100%	203%
Far West - $/ML	4.55	6.82	8.78	8.81	9.28	36%	104%
Murray - $/ML	2.63	3.96	8.78	8.81	9.28	135%	253%
Murrumbidgee - $/ML	1.24	1.85	8.78	8.81	9.28	402%	648%
North Coast - $/ML	4.55	6.82	7.85	8.04	8.14	19%	79%
Hunter - $/ML	4.55	6.82	7.85	8.04	8.14	19%	79%
South Coast - $/ML	4.55	6.82	7.85	8.04	8.14	19%	79%

a Under the current pricing structure, some users are subject to a fixed (per entitlement) charge only; while other users are subject to the same fixed charge + a usage charge. The minimum charge is the fixed charge only. The maximum charge assumes a user is currently subject to the 2-part tariff and is consuming 100% of their entitlement.

[155] Under IPART's 2006 determination, some groundwater users are subject to a fixed (per entitlement) charge only, while others are metered and subject to a two-part tariff (the same fixed charge + a usage charge).

C Cost Shares Proposed by NOW

Table C.1 NOW's proposed cost shares for IPART draft determination

High level activity	Cost Code	Activity	User share of costs	Cost code % of total IPART revenue requirement
Surface water monitoring	C01-01	Surface water quantity monitoring	70%	8%
	C01-02	Surface water quantity data management	50% [a]	1%
	C01-03	Surface water quality monitoring	50%	3%
	C01-04	Surface water ecology, biology & algal monitoring	50%	2%
	C01-05	Surface water quality database management	50%	0%
	C01-06	Surface water monitoring assets management	70%	1%
Groundwater monitoring	C02-01	Groundwater quantity monitoring	100%	6%
	C02-02	Groundwater quality monitoring	100%	0%
	C02-03	Groundwater database management	100%	0%
	C02-04	Groundwater monitoring assets management	100%	0%
Surface & groundwater metering	C03-01	Metering operations [c]	100%	0%
	C03-02	Metering data management	100%	0%
Surface water & groundwater analysis	C04-01	Water quality analysis	50%	1%
Water modelling & impact assessment	C05-01	Water sharing/water management modelling	50%	5%
	C05-02	Resource assessments	30%	0%
	C05-03	Water balances/accounting	100%	1%
	C05-04	Groundwater modelling	100%	1%

Water management implementation	C06-01	Systems operation & water availability management	100%	5%
	C06-02	Trading & accounts management	100%	3%
	C06-03	Plan performance monitoring & reporting	50%	8%
	C06-04	Blue-green algae management	50%	1%
	C06-05	Environmental water management	0%	6%
Water management planning	C07-01	Water sharing plan development	70%	5%
	C07-02	Operational planning	75% [b]	9%
	C07-03	Environmental water planning	0%	7%
	C07-04	Cross-border & national commitments	50%	3%
	C07-05	Water industry regulation	30%	1%
River management works	C08-01	River management works	50%	3%
Water consents administration	C09-01	Consents administration	100%	4%
	C09-02	Licence conversion & entitlement specification	100%	2%
	C09-03	Compliance	100%	7%
	C09-04	Consent transaction Overhead	100%	3%
Water consents transactions	C10-01	Water consents transactions	100%	0%
Business administration	C11-01	Financial administration	100%	3%
	C11-02	Business development	70%	1%
Capital program	C12-01	Surface water assets renewal	70%	0%
	C12-02	Groundwater assets renewal	100%	0%
	C12-03	Water laboratory assets renewal	50%	0%
	C12-04	Metering water use systems on unregulated rivers & groundwater	90%	0%
	C12-05	Integrated corporate water & ecological databases	50%	0%

a Lachlan Valley Water noted that that NOW proposed to increase the user share for C01-02 Surface water quantity data management and reporting from 50% to 70%. NOW has confirmed that this number was incorrectly listed in its (December) 2009 submission as 70%.

b NOW has confirmed that this number was incorrectly listed in NOW's (December) 2009 submission as 100%.

c As noted in the report, costs for the metering operations will be recovered through the meter charges (and not via prices).

Source: NOW, December 2009 submission for 2010 Bulk Water Price Review.

D Illustrative example of cost allocation

The cost allocation process is best explained by example. Table D.1 shows the process for allocating 'surface water monitoring' costs to valleys and water types. Note the following:

- The cost driver is the number of gauging stations that are funded by NOW in a given valley. NOW considers this to be the key determinant of costs for 'surface water monitoring'.
- Cost allocation shares for each valley and water type are calculated to be the number of gauging stations in a valley/water type, divided by the total number of gauging stations.
- The user share of Scenario 1 costs for surface water monitoring is 70%. IPART's total efficient costs for this cost code (in this instance $4.199 million) are multiplied by the user share to obtain $2.940 million.
- This user share of expenditure is multiplied by the cost allocation shares to determine the costs attributable to each valley and water type.

Note that this allocation of costs results in the following outcomes:

- Unregulated river users in the North Coast receive 20.8% of surface water monitoring costs under this allocation (as a large number of gauging stations are located on unregulated rivers in this valley).
- Around 3 quarters of surface water monitoring costs are allocated to unregulated rivers, and one quarter of costs is allocated to regulated rivers (as most of the gauging stations on regulated rivers are owned by State Water and not NOW).

Table D.1 Illustrative example: allocation of Scenario 1 'surface water quantity monitoring' for 2011/12

Water Type	Valley	Number of gauging Stations	Cost allocation shares	Costs allocated ($'000)
Regulated rivers	Border	3	0.8%	23
	Gwydir	7	1.8%	53
	Namoi	2	0.5%	15
	Peel	1	0.3%	8
	Lachlan	15	3.9%	115
	Macquarie	12	3.1%	92
	Far West	0	0.0%	0
	Murray	10	2.6%	76
	Murrumbidgee	35	9.1%	267
	North Coast	2	0.5%	15
	Hunter	3	0.8%	23
	South Coast	1	0.3%	8
	TOTAL (REG.)	91	23.6%	695
Unregulated rivers	Border	7	1.8%	53
	Gwydir	6	1.6%	46
	Namoi	16	4.2%	122
	Peel	2	0.5%	15
	Lachlan	1	0.3%	8
	Macquarie	13	3.4%	99
	Far West	19	4.9%	145
	Murray	15	3.9%	115
	Murrumbidgee	39	10.1%	298
	North Coast	80	20.8%	611
	Hunter	27	7.0%	206
	South Coast	69	17.9%	527
	TOTAL (UNREG.)	294	76.4%	2,245
Groundwater	GW Inland	0	0.0%	0
	GW Coastal	0	0.0%	0
	TOTAL (GW)	0	0.0%	0
Total		385	100%	2,940

Note: The 'Surface water monitoring costs' allocated in this table are the user share (70%) of Scenario 1 costs.

Source: Extrapolated from NOW's cost allocation model.

E Cost Recovery by Valley

IPART's draft determination results in the following levels of cost recovery.

Table E.1 Levels of Cost recovery – Regulated Rivers (%)

Valley	2010[a]	2012	2013	2014	NPV (2012-2014)
Border	100%	95%	100%	100%	98%
Gwydir	100%	87%	100%	100%	96%
Namoi	100%	76%	89%	100%	88%
Peel	100%	48%	57%	66%	57%
Lachlan	100%	65%	75%	87%	75%
Macquarie	100%	78%	90%	100%	89%
Murray	100%	100%	100%	100%	100%
Murrumbidgee	100%	98%	100%	100%	99%
North Coast	11%	63%	71%	81%	72%
Hunter	100%	43%	50%	58%	50%
South Coast	69%	64%	73%	84%	73%
Total Regulated	98%	85%	91%	95%	90%

a 2010 Levels of Cost Recovery represent the allowed figures from the 2006 price determination.

Table E.2 Levels of Cost recovery – Unregulated Rivers (%)

Valley	2010[a]	2012	2013	2014	NPV (2012-2014)
Border	100%				
Gwydir	100%	66%	74%	85%	75%
Namoi	100%				
Peel	100%				
Lachlan	100%	86%	97%	100%	94%
Macquarie	100%				
Far West	70%	100%	100%	100%	100%
Murray	71%	82%	90%	100%	91%
Murrumbidgee	100%	55%	59%	66%	60%
North Coast	68%	100%	100%	100%	100%
Hunter	100%	100%	100%	100%	100%
South Coast	100%	100%	100%	100%	100%
Total Unregulated	88%	91%	93%	96%	93%

a 2010 Levels of Cost Recovery represent the allowed figures from the 2006 price determination.

Table E.3 Levels of Cost recovery – Groundwater (%)

Valley	2010[a]	2012	2013	2014	NPV (2012-2014)
Border	87%				
Gwydir	87%				
Namoi	87%				
Peel	87%				
Lachlan	87%	77%	83%	87%	83%
Macquarie	87%				
Far West	87%				
Murray	87%				
Murrumbidgee	87%				
North Coast	42%				
Hunter	42%	100%	100%	100%	100%
South Coast	42%				
Total Groundwater	75%	82%	87%	90%	86%

a 2010 Levels of Cost Recovery represent the allowed figures from the 2006 price determination.

Table E.4 NOW's overall levels of cost recovery (%)

	2010[a]	2012	2013	2014	NPV (2012-2014)
TOTAL NOW	88%	86%	90%	94%	90%

a 2010 Levels of Cost Recovery represent the allowed figures from the 2006 price determination.

F Consideration of water charge (planning and management information) rules 2010, arising from the *Commonwealth Water Act 2007*

IPART has been in contact with the ACCC regarding the requirement to publish information relating to the *Water Charge (Planning and Management Information) Rules 2010*, arising from the Commonwealth Water Act 2007. The ACCC has advised that IPART is not responsible for the publication of this information in accordance with the rules. Our draft report and determination contains much of this information and the table below indicates where it can be located in the draft report and determination.

Information to be published as set out in clause 5 of the rules	**Detailed information about the requirement – location in the determination/report**
Name or a description of the regulated charge	
-Charges for regulated river water users	See chapters 6,9 and determination schedules 1 and 5.
-Charges for unregulated river water users	See chapters 6,9 and determination schedules 2 and 5.
-Charges for groundwater users	See chapter 6 and determination schedules 3 and 5
-Metering service charges	See chapter 10 and determination schedule 4
-Consent transaction charges	See chapter 11 and determination schedule 4
Amount of the regulated charge (whether expressed as a dollar amount or as fee units) or details of rates, fixed and variable components and all other details necessary to determine the amount	
-Charges for regulated river users	See chapter 9 and determination schedules 1 and 4.
-Charges for unregulated river water users	See chapter 9 and determination schedules 2 and 4.
-Charges for groundwater users	See chapter 9 and determination schedules 3 and 4.
-Metering service charges	See chapter 10 and determination schedule 4
-Consent transaction charges	See chapter 11 and determination schedule 4

F Consideration of water charge (planning and management information) rules 2010, arising from the Commonwealth Water Act 2007

Information to be published as set out in clause 5 of the rules	Detailed information about the requirement – location in the determination/report
Legislative, contractual or other authority for the regulated charge	See chapter 3 and determination background
Description of the process applied in determining the regulated charge including: the cost allocation principles; and whether the regulated charge has been the subject of consultation, a review or audit and, if it has, a description of the process of the consultation, review or audit and a summary of its outcome	See chapter 2-7
Class of persons by whom the regulated charge is payable	
-Charges for regulated river users	See chapter 9 and determination schedule 1
-Charges for unregulated river water users	See chapter 9 and determination schedule 2
-Charges for groundwater users	See chapter 9 and determination schedule 3
-Metering service charges	See chapter 10 and determination schedule 4
-Consent transaction charges	See chapter 11 and determination schedule 4
Person to whom or agency to which the regulated charge is payable	See chapters 2,3 and determination background
When the regulated charge is payable and, if payable by instalments, the number of instalments and intervals at which they are payable	Should include information on when the charge is payable (eg, on application for a licence, annually, in advance, instalments etc)[a]
-Charges for regulated river users	See determination schedule 1
-Charges for unregulated river water users	See determination schedule 2
-Charges for groundwater users	See determination schedule 3
-Metering service charges	See chapter 10 and determination schedule 4
-Consent transaction charges	See chapter 11 and determination schedule 4
If applicable, the water resource, catchment or district, and the water resource plan or other plan, to which the regulated charge relates	See chapter 9 and determination schedules 1,2 and 3
If applicable, the class of water access right, water delivery right or irrigation right to which the regulated charge relates	See chapter 9 and determination schedules 1,2 and 3
A description of the water planning and water management activity or activities to which the regulated charge relates including, in relation to each activity: the financial year or other period during which the activity is being, or is to be, carried out; the actual or estimated operating, capital and corporate services costs of the activity in respect of the financial year or other period; whether the costs of the activity have been the subject of consultation or a review or	See chapter 3, 4, 5, 6, 7 and appendix L

Information to be published as set out in clause 5 of the rules	Detailed information about the requirement – location in the determination/report
audit; the relationship between the costs of the activity and the calculation of the regulated charge	
Any other information the person determining the charge considers necessary or desirable to explain the regulated charge.	See chapters 7, 8, 10 and 11.

a In providing comment on the Draft Guidelines, IPART suggested some amendments to the description of this requirement and noted that it did not publish this information in its 2006 report.

G Consideration of Section 15 factors

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

i) the cost of providing the services concerned

ii) the protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standard of services

iii) 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

iv) the effect on general price inflation over the medium term

v) the need for greater efficiency in the supply of services so as to reduce costs for the benefit of consumers and taxpayers

vi) 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

vii) 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

viii) 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

ix) the need to promote competition in the supply of the services concerned

x) considerations of demand management (including levels of demand) and least cost planning

xi) the social impact of the determinations and recommendations

xii) standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise).

Table G.1 outlines the sections of the report that address each matter.

Table G.1 Consideration of Section 15 matters by IPART

Section 15(1)		Report Reference
a)	the cost of providing the services	Chapters 3-5 We engaged PwC to undertake an independent review of NOW's costs and provide a recommendation on the efficient level of costs.
b)	the protection of consumers from abuses of monopoly power	Chapter 3-6, 9 and 12 We have set prices to recover NOW's efficient costs. This ensures that consumers are protected from excessive price increases.
c)	the appropriate rate of return and dividends	Chapter 4 and Appendix M NOW is not required to pay dividends.
d)	the effect on general price inflation	NOW's increased prices represent a small proportion of total farm costs. The increased costs that are passed through to final consumers are likely to be minimal and the effects on inflation negligible.
e)	the need for greater efficiency in the supply of services	Chapters 4 and 5 IPART and consultants PwC have identified a number of areas where NOW can increase its efficiency and its proposed costs have been adjusted downwards accordingly.
f)	ecologically sustainable development	Chapter 3 and appendix I and L Our determination has provided NOW with sufficient revenue to efficiently carry out its monopoly water management services. These services/activities are aimed at achieving the sustainable use of water resources, and hence ecologically sustainable development.
g)	the impact on borrowing, capital and dividend requirements	Not applicable NOW is not required to pay dividends.
h)	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	Not applicable
i)	need to promote competition	NOW's services are considered to be monopoly services. Therefore IPART regulates the costs and prices that NOW can pass on to water users in order to ensure that users only bear the efficient costs of their use.
j)	considerations of demand management and least cost planning	Chapter 3,4,6 and 10 We have decided to charge users a two-part tariff for this determination where they have a meter. They no longer have the option to "opt-in." This should reduce costs for these users and provide an incentive for these users to reduce water usage.

Section 15(1)		Report Reference
k)	the social impact	Chapter 12 IPART has considered the impact on customers of its pricing decisions. We consider that in the majority of cases the impacts on customers will not be excessive. In most cases customer bills represent a small proportion of total farm cash costs.
l)	standards of quality, reliability and safety	Chapter 3, 4, 13 and Appendix L. We have set out in Appendix L the standards of performance that we expect NOW to achieve.

H Summary of IPART's response to issues raised in stakeholder submissions

The following table sets out the key comments submitted by stakeholders (excluding NOW) that require some form of response, together with how we addressed those comments in our draft report.

Table H.1 Stakeholder comments and IPART's response

Issue	IPART Response
Issues specific to water management services and the WAMC regulatory framework	
Stakeholders support a longer price determination period commencing 1 July 2011	IPART has considered NOW's proposal and stakeholders' views on the appropriate length and start date of the determination period. We concluded that a 3-year determination period best balances the benefits and risks. The 3-year-determination period lowers regulatory costs for stakeholders and NOW, but also reduces the risk associated with variation between the forecast costs and revenue assumed in making the determination, and actual costs and revenue due to such factors as the Murray Darling Basin Plan. (See section 2.1) IPART concluded that a start date of 1 July 2011 was most practical given the need for us to 'stop the clock' earlier in our review had made a 1 July 2010 start date impossible. This start date avoids practical difficulties associated with changing prices mid way through a billing cycle, but also signals to NOW the importance of providing accurate, comprehensive and timely information. (See section 2.1)
Stakeholders suggest IPART needs to improve NOW's accountability and propose some options to achieve this	IPART has made recommendations to the Minister of Water that NOW improve its consultation with users as well as the capacity of its financial systems to report its monopoly activities by activity, water source and valley, and to implement formal ring fencing provisions for its non-monopoly services. In addition, IPART expects NOW to report annually against its expenditure, revenues and service order outputs. (See chapter 13)
Issues related to the establishment of efficient costs and the determination of the revenue requirement	
There is a common view that NOW has not justified its proposals, and concerns about the implications of the quality of NOW's information for stakeholders' submissions and IPART's decision-making	IPART has accepted that NOW's efficient water management costs are increasing. However, due to the lack of information and justification of its proposed cost increases along with questions about NOW's efficiency and forecast costs, the allowed cost increases are significantly less than proposed by NOW. (See chapter 1)
Stakeholders support the quality of PwC's Draft report but have concerns about the issues it identifies	PwC has used its professional judgment, drawing on the best available information provided by NOW and other stakeholders to make its recommendations on the efficient level of NOW's costs. IPART has accepted PwC's recommendations since these recommendations balance the concerns with NOW's inadequate information with the increasing complexity of the water resource management environment in which NOW operates. (See chapter 4)
There is common opposition to the recovery of MDBA costs from users, given forecast increases and the lack of transparent oversight of the Authority	IPART agrees with stakeholders that they should not be required to pay for significant increases in the user share of MDBA costs where the services being provided, and its associated costs, are not transparently reported for external review. IPART has decided not to include an increase in the user share of MDBA costs in prices, due to an absence of information that indicates that such user contributions are efficient and consistent with the impactor pays principle. (See chapter 5)

Issue	IPART Response
Stakeholders suggest that there is a lack of planning and stakeholder consultation for NOW's capital programs	IPART accepts PwC's findings and some stakeholder views on NOW's inadequate planning, stakeholder consultation, and documentation of its capital programs. IPART has decided to exclude all of NOW's capital assets prior to 1 July 2011 from the regulatory asset base for the purposes of setting prices (ie, no depreciation or return on capital for assets prior to 1 July 2011). Any new capital expenditure incurred after 1 July 2011 will be rolled into a regulatory asset base, but will be subject to a prudency and efficiency test for the next price determination beginning 1 July 2014. If NOW has not improved its capital planning and asset management frameworks, this would influence decisions about the prudency and efficiency of capital expenditure over the period. (See section 4.3.4) IPART has also made recommendations to the Minister to improve NOW's consultations with its stakeholders. (See chapter 13)
Stakeholders strongly oppose the recovery of NOW's Scenario 2 costs from users (ie, recovery of 'additional' costs arising from the Murray Darling Basin Inter-Governmental Agreement/ Water Act if the Commonwealth does not fund these activities	Of the $10.5 million that NOW has sought to recover through its Scenario 2 costs, IPART has considered a maximum of $1.8 million per annum to be efficient, directly related to NOW's core monopoly service activities under Scenario 1, not funded by external parties, and consistent with best practice water management. IPART has therefore allowed $1.8 million of the scenario 2 costs to be included in NOW's prices. (See section 4.2.4).
Stakeholders strongly oppose the principle of NOW recovering a return on capital, on the basis that it is a government agency and is not operating like a business	While we recognise that stakeholders are opposed to NOW receiving a rate of return on its assets, IPART has decided to provide NOW with a return on capital because we are of the view that the opportunity cost of capital should be reflected in prices. This ensures that resources are allocated and used efficiently, and that efficient capital expenditure occurs. This is consistent with the standard approach adopted by IPART and other economic regulators across a range of industries, covering both government and privately regulated entities. (See section 4.4.) We have excluded all assets prior to 1 July 2011 for the calculation of a return on capital. IPART's decision to set the RAB at zero means that this decision has a minimal impact on prices. (See section 4.3.4)
There is general support for the retention of a cap on annual bill increases plus a concern about NOW's proposal to achieve full cost recovery over the next price determination	IPART has balanced the need for NOW to recover its costs with the concerns of stakeholders that NOW's proposal to achieve full cost recovery will have significant impacts on licence holders. IPART has decided to mitigate price impacts by setting prices so that the forecast increase in bills for each water source and valley is capped at 20% a year (for forecast usage) in real terms. This approach removes the complexity of capping actual individual bills, but still allows us to mitigate the impact on customers. IPART's decision to include a price cap achieves an appropriate balance between allowing NOW to gradually transition towards higher levels of cost recovery, while also mitigating the impact of prices on water users. (See section 6.4).

Issue	IPART Response
Issues related to the allocation of costs between users and the government and between water types	
There are concerns that there may be cross-subsidisation between valleys/water types	IPART has considered the arguments by various stakeholders for uniform prices, resulting in cross subsidisation, versus a more disaggregated approach, such as valley specific pricing for the main water types. While IPART agrees that a disaggregated approach to setting prices is ideal because it minimises the cross subsidisation between valleys and water types, we had to balance this approach with the accuracy and availability of valley-specific cost information. For regulated and unregulated rivers, while NOW does not record its costs at a valley level, we consider NOW's approach of allocating costs to the valleys is reasonable cost reflective and minimises cross subsidisation. We have decided, therefore, to maintain valley-based prices for regulated and unregulated rivers and ensure that prices are as cost reflective as possible, and transparency and accountability are enhanced. For groundwater sources, NOW does not have any reliable cost information on a valley basis in which to set valley specific prices. In principle, we have accepted NOW's proposal to move from valley-based groundwater prices to an 'inland' and 'coastal' split. We accept NOW's argument that groundwater aquifers do not align with surface water valleys and that it is not practicable to price by valley or, at this stage, water sharing plan area. However, to manage price shocks, we have set prices to gradually transition from valley-based groundwater prices to the inland and costal split. (See section 6.2)
There are concerns about the cost share ratios proposed by NOW for some activities	IPART has examined the cost shares that NOW has applied to allocate costs between users and the government. We are satisfied that they are consistent with the 2006 Determination and the impactor pays principle. Similarly we are satisfied that the changes made by NOW have not impacted on the user share of costs. (See chapter 5)
Issues related to setting price structure and price level	
Support for the IQQM/100-year average as the basis for regulated river usage tariffs or, failing that, adoption of the forecasts used in IPART's Draft Report for State Water	IPART has decided not to use the IQQM/100 year average but adopt the same usage forecasts for regulated rivers as was applied in the 2010 State Water Determination. While some stakeholders support the use of the IQQM model, we consider that no new evidence has emerged that would justify using different usage forecasts to calculate the regulated river charges levied by State Water and NOW. Therefore, we have decided to adopt the regulated river usage forecasts that were applied by us in the 2010 State Water Determination. (See section 8.4)
Concern about the equity of using entitlement volumes as a basis to set groundwater and unregulated river tariffs	IPART has considered the concerns of stakeholders that for most users the average level of extraction is significantly less than their entitlement volume. This has been weighed against the need to use the best available information in order to set cost reflective prices. IPART has decided to use entitlement volumes as the basis for tariffs, as it represent the best available information and is the key driver of NOW's costs (regardless of usage). (See chapter 8)

Issue	IPART Response
In general, stakeholders do not support NOW's proposal for 100% fixed prices for regulated, unregulated and groundwater sources.	While IPART recognises that there is a theoretical argument based on the underlying cost structure that NOW should receive 100% fixed charges, we note that this will transfer all risks associated with available water onto users, who will have no ability to reduce their bills through lower levels of extraction. Therefore based on our judgement of the allocation of risks and the abilities of entitlement holders and NOW to manage these risks, we consider that a 70% fixed to 30% usage ratio of expected revenue for each water source and valley provides an appropriate balance for the sharing of risks between NOW and entitlement holders. The 70/30 split provides NOW with a reasonable degree of revenue certainty while also providing entitlement holders with some scope to reduce their bills through lower levels of extraction. (See section 6.3)
Concerns about the customer and economic impacts arising from the magnitude of NOW's proposed price increases	While NOW's proposed cost and price increases are significant, IPART has reviewed the efficiency of these costs and only accepted the efficient level of costs. As a result, the approved price increases are significantly less than those proposed by NOW. To mitigate the impact of these price increases we have incorporated a 20% per annum cap on forecast bill increases in our calculation of prices. Our analysis indicates that for many water users, the increases in dollar terms will not be prohibitive. For example, around 84% of all users face a bill increase of less than $100 per year. (See chapter 1)
There is support for the retention of minimum bills – but debate as to whether the charge should be kept at $60 or increased to $200 per annum	IPART has decided to increase the minimum bill from $60 to $95 in real terms in line with the maximum per annum increases in water management charges across water sources and valleys. This reflects the fact that NOW has stated that the $60 minimum bill does not cover its administration costs, and that the charge has been fixed since the 2006 Determination. Some stakeholders have also suggested that the minimum bill should be extended to cover stock and domestic, riparian, and other basic rights holders. NOW have indicated that they are in the initial stages of developing a policy on basic rights and we consider that, at this stage, it is too premature to consider extending the charge to all basic rights holders. However we have flagged this issue for consideration in the next determination. (See section 6.5)
Most stakeholders do not support the introduction of a meter service charge in the upcoming determination period because of a lack of available information and the proposed operating and maintenance expenditures are too high	IPART has decided to introduce a meter service charge for unregulated and groundwater users that is similar to the approved charges set in the 2010 State Water Determination for regulated users. While we note that NOW has not consulted widely with its stakeholders regarding its proposed meter service project, we consider that the consultancy report which provides estimates of the efficient costs is reasonable and cost reflective and we have released the consultancy report for public comment. Given that the same information was used to set the charges in the 2010 State Water Determination we have decided to set consistent metering charges for NOW based on this information. (See chapter 10)

Issue	IPART Response
Stakeholders have raised concerns about NOW's inefficiency in processing consent transactions and the significant increases in consent transaction charges	IPART has decided to set the consent transaction charges based on NOW's proposal (with some minor adjustments). We have examined the efficiency of NOW's approach to processing consent transactions and have found that the complexity of assessment is the key driver of NOW's processing time. IPART considers that NOW's approach to setting consent transaction charges is reasonable and that, while the hours to complete consent transactions have increased significantly from the 2006 Determination, the charges reflect efficient costs. (See chapter 11)
Stakeholders have argued that the overheads related to consent transactions should be included in consent transaction charges, and not included in the general operating expense base	IPART has decided not to move way from its standard and well established approach of only recovering the incremental cost of non-standard services, such as consent transaction fees and miscellaneous charges. Since the overhead costs are incurred by NOW regardless of whether they are completing consent transactions, to ensure that there are no cross subsidies only the incremental costs are included in the consent transaction charges. This approach is consistent with the approach applied in the 2006 Determination and equivalent charges in the metropolitan water price determinations. (See section 11.5)

I Impact of decisions on consolidated revenue and the environment

I.1 Impact on the Consolidated Fund

Unlike a state-owned corporation such as State Water, NOW does not pay any dividends or tax. In the case where NOW's costs were equal to its revenues it would also not make any profits and there is no issue of surplus or deficit funds. In the case where NOW may over recover significant levels of revenue, for example due to higher than forecast water usage, then the excess revenue would go to Treasury. Similarly, when NOW under recovers its revenue against our forecasts, Treasury may be required to make up any shortfall.

Revenue impact from capping bills at 20%

We consider that it is appropriate to place a cap on prices such that forecast annual bill increases do not exceed 20%. We have set prices so that, with the exception of increases in the first year for some groundwater users currently subject to a fixed charge only, forecast bills do not increase by more than 20% per annum (assuming forecast levels of usage). The shortfall in revenue resulting from the price cap is shown in Table I.1 below.

Table I.1 NOW's forecast levels of cost recovery ($'000, 2009/10)

	2009/10	2011/12	2012/13	2013/14	% Change 2009/10 to 2013/14
IPART's notional user share of costs	33,079	39,377	40,841	41,840	26%
IPART's target user share of costs (via prices)	29,099	33,944	36,925	39,190	33%
Difference between notional user share and target user share	3,980	5,433	3,916	2,650	-33%
NOW's forecast level of cost recovery under IPART's draft determination	88%	86%	90%	94%	

Table I.1 shows the difference between the notional user share of revenue, and the target user share of revenue that NOW is expected to recover through prices. The difference between the notional and target revenue is due to the price cap. This level of under-recovery due to the price cap will need to be funded by government. The table also shows that NOW's forecast level of cost recovery under our draft determination is increasing from 88% in 2009/10 to 94% in 2013/14.

Table I.2 Revenue requirement from Government

	2009/10	2011/12	2012/13	2013/14	% Change 2009/10 to 2013/14
Total Government share of NOW's total efficient costs:	17,260	27,394	26,687	29,041	68%
Difference between notional user share and target user share	3,980	5,433	3,916	2,650	-33%
Total Government contribution to the cost of NOW's monopoly activities	21,239	32,828	30,603	31,691	49%
% Government share of NOW's total efficient costs	42%	49%	45%	45%	

Chapter 5 provides our decision for allocating costs to the Government, on behalf of the community. Table I.2 shows that the total Government contribution to the cost of NOW's monopoly activities is comprised of the Government share of NOW's total efficient costs and the difference between the notional user share and target user share of revenue that results from the bill cap. Table I.2 also shows that the Government share of NOW's total efficient costs is increasing from 42% to 45% over the 2011 Determination.

I.2 Impact on the environment

We have set prices to allow NOW to recover the efficient costs of water resource management. While we have made reductions to NOW's proposed levels of expenditure, we consider that the costs we have allowed NOW to recover through prices in conjunction with the government share of revenue from Treasury will allow NOW to conduct all of its water resource management activities. NOW undertakes its water resource management functions to ensure that the level of water extractions is sustainable, and therefore to minimise impacts on the environment.

In addition, we have also included as an appendix a schedule of NOW's Monopoly Service Order activities with outputs and performance levels that we expect will be achieved over the 2011 Determination. Many of these activities are directly related to the achievement of environmental objectives and will ensure that NOW achieves an appropriate level of environmental targets.

J NOW report to PwC on achievements over the 2006 determination

The following is an extract from one of NOW's submissions to IPART on a draft of the PwC report, relating to NOW's achievements over the 2006 determination.

Attachment 3

KEY IPART Activities for 2006-2010 Determination

In DNR's September 2005 submission for the 2006-10 determination the following NWI actions were listed as outstanding activities to be undertaken:

- Completion of the water planning and licence conversion process across NSW for the remaining 20% of water use (which involves a large number of licence holders)
- Implementing indefeasibility of water title
- Regulating floodplain harvesting
- Further development of the water title register
- Steps to facilitate increased water trading
- Further development of the water accounting framework
- Knowledge and capacity building efforts

In addition the submission advised that DNR needed to increase its level of service provision for the following activities:

- Implementation of the 31 WSPs already finalised.
- Finalisation of the WSPs currently under development. Six plans are scheduled to commence by July 2006.
- Establishment of WSPs for the balance of NSW. 60 WSPs are currently under development and are scheduled to commence by 2009.
- Ongoing conversion of WA licences to WMA entitlements
- Collection of additional data for monitoring outcomes from the WSPs
- Annual reviews of the WSPs
- Provision of information and advice in relation to environmental flow reference groups that advise the Minister
- Provision of information and advice to compliance advisory committees
- Increased water trading activity
- Provision of information to the NRC and CMAs
- Increased policing for unauthorised water extraction

These activities were in addition to or an expansion of DNR's normal water management functions. DNR could only have been expected to achieve these outcomes if the additional resourcing it requested was provided. This was not provided with cuts made to DNR's requested level of operating expenditure. In particular despite DNR's 2005 submission placing much emphasis on the importance of and the need to increase staff to complete the water sharing plans IPART cut the costs forecast for planning and development of water sharing plans by half i.e. by $1.25 million per year i.e. by 10 FTEs per year.

Clearly the level of funding required to undertake these activities was not provided to DNR. Nonetheless NOW has made significant progress in all these areas as shown in the attached progress report. NOW was only been able to achieve much of this progress through excessive and unpaid hours worked by staff. A review of unpaid hours of staff was undertaken for the 2007/08 year which found at the minimum (given that the flexsys time system does not allow weekend hours or more than 10 hours per day to be recorded) this amounted to over 10,000 hours per year.

The following reports NOW's achievement and progress against the increased activities listed in its 2005 submission

PROGRESS AGAINST INCREASED ACTIVITIES IDENTIFIED IN DNR's 2005 SUBMISSION

1. Outstanding NWI Activities	PROGRESS
• Completion of the water planning and licence conversion process across NSW for the remaining 20% of water use (which involves a large number of licence holders)	• Substantially achieved - by the end of 2009/10 (i.e. the 2006 Determination period) approximately 95% of all water use within NSW will be subject to a water sharing plan; • Key plans delivered during the determination period include the 6 inland aquifer plans, the Great Artesian Basin, Paterson, Border Rivers Regulated, Central Coast, Lower North Coast, Hunter, Coffs Harbour, Bellinger, and within the next few months Peel, Tweed, Richmond, Bega/Brogo, Murrah and Towamba • NOW has also substantially progressed work (and therefore the expenditure) on the Surface Water and Groundwater WSPs for the Greater Metropolitan Region and the Lowbidgee. These WSPs will likely be gazetted in the 2nd half of 2010; • Work (and therefore expenditure) is underway on all remaining plans in NSW to cover the remaining 5% of water use. • If the level of resourcing sought in DNR's 2005 submission had been funded (ie some 14 FTEs per year were cut from DNR's forecast requirements) the water sharing plan process would have been completed with substantial benefits to all water users, this is increasingly becoming an issue with the introduction of the Basin Plan. • Licensing conversion process runs in parallel with the water sharing plan process.
• Implementing indefeasibility of water title	• Achievement is subject to completion of water sharing plans • Indefeasibility of water title is dependent on completion of the water sharing plans and the corresponding licence conversion, verification and registration of security interests that is undertaken when the plan is made.
• Regulating floodplain harvesting	• Substantially achieved - the NSW Floodplain Harvesting Policy is expected to be finalised by June 2010, within the determination period. • In July 2008, the Minister announced approval would not be given to construct any new works such as levees, dams and channels that capture passing floodwaters no further works could be constructed that would facilitate the harvesting of water occurring on the floodplain. This halt on further development was the first step in the development of the floodplain harvesting policy. • In November 2008, a draft Floodplain Harvesting Policy was released for targeted consultation and a number of key issues were identified including the compensability and tenure of these licences; • The latest version of the Policy will be released publicly for consultation in April 2010 and submitted to the Minister for Water and Cabinet for consideration by June 2010; • All commenced water sharing plans have the ability to be amended to regulate floodplain harvesting once the NSW

1. Outstanding NWI Activities	PROGRESS
	Government's policy has been finalised; • The capability for modelling floodplain harvesting processes has been incorporated into river basin models. This included significant user-surveying, model re-calibration and model validation in pilot areas; • NOW is preparing a business case to secure $50m of Commonwealth funding assistance to accelerate the roll-out of licensing of floodplain harvesting extractions.
• Further development of the water title register	• Achieved - The Water Access Licence Register is fully operational and administered by Land and Property Management Authority. • NOW supports and assists in maintenance of the Register through ongoing data provision and validation of licences.
• Steps to facilitate increased water trading	• Achieved – NSW leads the way in providing a robust and flexible water trading system resulting in record number of water trades in recent years despite limited water allocations. • Interstate Bilateral Agreements on water trade between NSW & SA and NSW & Victoria signed. • Implemented all NWI actions on progressive removal of barriers to trade as required including the introduction and administration of the 4% interim trade threshold for permanent trade in entitlements out of Irrigation Corporation areas. • Establishment of a publicly accessible Water Trading Register on website showing volumes of trade and prices paid • Published information on processing times for trade on website as required under the national water reforms • Made legislative changes to facilitate trading of co-held licences and introduced zero share licences to facilitate trade. • Provided input to the development of ACCC's water market rules, water charge rules and water trading rules under the Commonwealth Water Act 2007 • Working with Commonwealth and other States on a National Water Market System.
• Further development of the water accounting framework	• Achieved - the Office has had a major role in developing the National Water Accounting framework which is now managed by the Bureau of meteorology • This has included the development of methods and standards and provision of information for the national water accounting stocktake, and completion of pilot projects for the Bureau
• Knowledge and capacity building efforts	• Achieved – the COAG knowledge and capacity building working group established with NOW leading NSW input. • Partnerships with eWater CRC and Cotton Catchment Communities CRC to help build capacity and access broader knowledge base. • Implemented Graduate Program and Peter Cullen Postgraduate Scholarship to increase knowledge capacity and extend research needs. • National Hydrological Modelling Strategy developed to help support hydrological modelling of rivers. • Partnership with CSIRO on catchment and climate modelling and Sustainable Yields Project.

1. Outstanding NWI Activities	PROGRESS
	• Undertook collaborative research with a variety of Universities. • National Cyanobacterial Workshop run by staff • Skills development program instituted for Licensing Officers in River Processes, Erosion and Sediment Control, Threatened Species Assessment, Geographical Information Systems and Water Licensing System

2. Increased service provision	PROGRESS
• Implementation of the 31 WSPs already finalised.	• Achieved – All implementation programs for the original 31 water sharing plans have been updated to reflect changes in legislation, policy and administrative arrangements and to reflect risks and priorities. • Environmental monitoring is being undertaken within the regulated river water sources and in the unregulated river water sources in the Kangaroo, Karuah, Coopers, Tenterfield, Commissioners, Wybong and Dorrigo Valleys. • Groundwater level monitoring has commenced in all 5 coastal groundwater sharing plans. • 13 socio-economic profiles have been completed as part of the socio-economic monitoring.
• Finalisation of the WSPs currently under development. Six plans are scheduled to commence by July 2006.	• Substantially achieved – 5 of the 6 inland aquifer plans were commenced by October or November 2006 and the Lower Lachlan groundwater plan in 2008. • In addition, NOW administered a $135 million assistance program to groundwater users in the 6 major inland aquifers as a result of entitlement reductions through the water sharing plans. • The Great Artesian Basin, Paterson, Border Rivers, Central Coast, Lower North Coast, Hunter, Coffs Harbour, and Bellinger plans have commenced and by July 2010 the Peel, Tweed, Richmond, Bega/Brogo, Murrah and Towamba are likely to commence.
• Establishment of WSPs for the balance of NSW. 60 WSPs are currently under development and are scheduled to commence by 2009.	• Limited achievement – during the determination period NOW gazetted a further 14 water sharing plans, and another 6 should be gazetted by July 2010. However in number terms there remain around 32 plans to complete. • Completion of all plans by 2009 was dependent on full resourcing which was not provided by the IPART determination.
• Ongoing conversion of WA licences to WMA entitlements	• Substantially achieved – around 20,000 licences have been converted, verified and uploaded to the Water Access Licence Register. • For the water sharing plans that have commenced between 2004 and 2009, essentially all water licences have been converted and around 98% uploaded to the Water Access Licence Register. Those outstanding are those essentially with difficulties with ownership verification.

2. Increased service provision	PROGRESS
• Collection of additional data for monitoring outcomes from the WSPs	• Substantially achieved • A major review of the Integrated Monitoring of Environmental Flows (IMEF) program was undertaken for the regulated rivers to better align monitoring with the provisions of the water sharing plans. • Monitoring data has been collected on flow response of microinvertebrates, wetland plants, algae, dissolved organic carbon, fish and shrimps, and frogs. Remote sensing data has been collated to assess wetland inundation levels. Monitoring programs are in place for the Lower Murray Darling, Murrumbidgee, Lachlan, Macquarie, Namoi, and Gwydir. • A monitoring program has been developed for the current WSP for unregulated water sources focussing on pool refugia, fish passage, predictive modelling, field verification of very low flow cease to pump, and predictive modelling of macroinvertebrate communities. Work has commenced in the Kangaroo, Karuah, Coopers, Tenterfield, Commissioners, Wybong, and Dorrigo valleys. • A program is underway to identify groundwater dependent ecosystems areas subject to groundwater sharing plans. Work has largely been completed in the Kulnura /Mangrove Mountain, and Tomago / Tomaree / Stockton aquifers. • 61 water level monitoring bores and 7 water quality monitoring bores are monitored in the coastal groundwater WSP areas and 1436 water level and 60 water quality monitoring bores monitored in the inland groundwater WSP areas. • The Water Laboratory received 9000 samples during 2008/09 and performed some 24,500 chemical tests and 3,500 algal counts on these. This was an increase over 2007/08 when 6900 samples were received and 20,000 chemical tests and 2800 algal counts were performed. • Catchment and climate modelling was undertake to support water sharing plans. • Surface water and groundwater interactions assessed for WSP areas.
• Annual reviews of the WSPs	• Limited achievement - no annual reports were completed for the first 3 years of the WSPs that commenced in 2004, as activities were directed toward addressing issues associated with severe drought across much of inland NSW. • However reviews of the combined first four years of plan operation for the 31 plans gazetted in 2004 were completed, as well as for the WSPs for the 6 major inland alluvial aquifers. The reviews were published on the website.
• Provision of information and advice in relation to environmental flow reference groups that advise the Minister	• Achieved – NOW participated in and provided expert hydrologic advice to the environmental flow reference groups for the Gwydir, Macquarie, Lachlan and Murrumbidgee Regulated Rivers. • This has included Information on wetland vegetation and macroinvertebrate flow responses to maximise the benefit and management of environmental flows.

2. Increased service provision	PROGRESS
• Provision of information and advice to compliance advisory committees	• Achieved – NOW contributes data and advice to a number of monitoring and advisory groups. • NOW provided data on water use, riverine health and groundwater management to inform the State of the Environment reporting in NSW. The last report was published in October 2009. • NOW co-ordinates the Sustainable Rivers Audit for the Murray Darling Basin on behalf of NSW. This program is largely funded by the MDBA, but has a considerable in kind component provided by NSW. Information collected on macroinvertebrate and fish health, as well as hydrologic stress is collected and included as part of the State of the Catchment Report Cards. • NOW is developing a state-wide GIS layer of groundwater dependant ecosystems to inform State of the Catchment Report cards on Groundwater Health • Actively managed and monitored instances of Blue Green Algae blooms at >140 locations during 2008/09 including the 1000km Murray River algal bloom. • Provided technical support to 9 Regional Algal Coordinating Committees across NSW.
• Increased water trading activity	• Achieved – NOW's reforms in the water trading area listed in Table 1 assisted in record levels of water trading over the last four years helping water business to manage in a period of severe drought.
• Provision of information to the NRC and CMAs	• Achieved – NOW provided detailed information to assist NRC and CMAs • NOW provided Riverine Health and Groundwater reports to the Natural Resources Commission for reporting against the state-wide natural resource management targets. • NOW developed Draft State of the Catchment Report Cards for each CMA in NSW. The report cards provide information on: water quality condition and trends, macroinvertebrate health, fish health and changes to hydrology. The report cards outline progress toward meeting the state wide NRM targets for the information of the NRC and CMAs.
• Increased policing for unauthorised water extraction	• Substantially achieved • Given the ongoing drought, this was an increased area for NOW (extract shown on next page) . • Increased compliance activities are shown in the following tables which were reported in the agency's last Annual Report. • Amendments to the WMA 2000 were made strengthening the offences in the Act and introducing higher penalties for non-compliance

Investigations and their associated outcomes under the water legislation are shown in tables below.

Compliance investigations

Act	Investigations	2005-06	2006-07	2007-08	2008-09
Water Act 1912 and *Water Management Act 2000*	Total number of investigations*	114	115	118	220
	Percentage (%) and number finalised**	(68) 78	(46) 53	(29) 32	(45) 98
	Number of ongoing investigations***	36	62	86	122
Rivers and Foreshores Improvement Act 1948 ****	Total number of investigations	81	42	18	24
	Percentage (%) and number finalised	(65) 53	(83) 35	(39) 7	(13) 3
	Number of ongoing investigations	28	7	11	21

* The total number of investigations commenced during the financial year

Table 1.9: Compliance outcomes

Act	Outcomes of completed investigations	2005-06	2006-07	2007-08	2008-09
Water Act 1912	No compliance action*	47	35	17	10
	Warning/negotiation	30	28	4	6
	Remediation agreement	0	0	0	0
	Remediation notice	4	1	5	9
	License suspension	1	0	0	1
	Prosecution	0	0	1	1
Water Management Act 2000	No compliance action*	18	10	12	12
	Warning letter	10	19	18	11
	Stop work order	0	0	0	5
	Remediation agreement	0	0	0	0
	Remediation notice	1	4	1	6
	Penalty notice	2	0	17	1
	Debit water account	0	0	0	1
	Prosecution	0	0	0	1
Rivers and Foreshores Improvement Act 1948 **	No compliance action*	38	16	4	1
	Warning letter	21	17	1	2
	Stop work order	2	0	0	1
	Remediation agreement	5	6	0	1
	Remediation notice	21	3	6	1
	Prosecution	0	1	1	3

* This figure represents the total number of cases that have an outcome recorded as 'No compliance action'. The 'No compliance action' outcomes include a range of reasons such as 'Actioned by other agency', 'Advisory letter', 'Authorised', 'Decided not to pursue', 'Exclusion', 'Exempt', 'No clearing/works', and 'Not covered under Act'. For complex cases there may be more than one 'No compliance action' and/or multiple 'Compliance actions'.

K Draft prices in $2010/11 by valley and source

Table K1 to Table K9 below set out IPART's draft prices in $2010/11.

K.1.1 Draft prices for regulated rivers ($2010/11)

Table K.1 Regulated River Tariffs – Fixed Component of 2-Part Tariff ($/ML of Entitlement)

Valley	Price ($2010/11)		
	2012	2013	2014
Border	2.00	2.12	2.16
Gwydir	1.05	1.24	1.27
Namoi	1.84	2.21	2.56
Peel	1.51	1.81	2.17
Lachlan	1.20	1.44	1.73
Macquarie	1.35	1.62	1.84
Murray	1.34	1.37	1.39
Murrumbidgee	1.05	1.12	1.14
North Coast	3.61	4.33	5.19
Hunter	1.76	2.11	2.54
South Coast	3.23	3.88	4.65

Table K.2 Regulated River Tariffs – Usage Component of 2-Part Tariff ($/ML)

Valley	Price ($2010/11)		
	2012	2013	2014
Border	1.54	1.63	1.66
Gwydir	0.96	1.14	1.17
Namoi	1.26	1.51	1.75
Peel	2.39	2.87	3.45
Lachlan	1.38	1.66	1.99
Macquarie	1.30	1.55	1.77
Murray	0.87	0.89	0.90
Murrumbidgee	0.67	0.71	0.73
North Coast	3.57	4.29	5.15
Hunter	1.13	1.36	1.63
South Coast	3.62	4.34	5.21

K.1.2 Draft prices for unregulated rivers (2010/2011$)

Table K.3 Unregulated River Tariffs – Fixed Component of 2-Part Tariff ($/ML of Entitlement)

Valley	Price ($2010/11)		
	2012	2013	2014
Border	2.41	2.89	3.47
Gwydir	2.41	2.89	3.47
Namoi	2.41	2.89	3.47
Peel	2.41	2.89	3.47
Lachlan	4.28	5.14	5.46
Macquarie	4.28	5.14	5.46
Far West	3.88	4.17	4.34
Murray	4.44	5.32	6.29
Murrumbidgee	5.35	6.42	7.71
North Coast	5.70	6.20	6.51
Hunter	1.97	2.08	2.14
South Coast	1.95	2.02	2.10

Table K.4 Unregulated River Tariffs – Usage Component of 2-Part Tariff ($/ML)

Valley	Price ($2010/11)		
	2012	2013	2014
Border	1.03	1.24	1.49
Gwydir	1.03	1.24	1.49
Namoi	1.03	1.24	1.49
Peel	1.03	1.24	1.49
Lachlan	1.84	2.20	2.34
Macquarie	1.84	2.20	2.34
Far West	1.66	1.79	1.86
Murray	1.90	2.28	2.70
Murrumbidgee	2.29	2.75	3.30
North Coast	2.44	2.66	2.79
Hunter	1.85	1.96	2.02
South Coast	1.28	1.33	1.38

Table K.5 Unregulated River Tariffs – Entitlement Charges for Customers on One-Part Tariff and Area Based Charges ($/ML of Entitlement; $/ha for Far West)

Valley	Price ($2010/11)		
	2012	2013	2014
Border	3.44	4.13	4.96
Gwydir	3.44	4.13	4.96
Namoi	3.44	4.13	4.96
Peel	3.44	4.13	4.96
Lachlan	6.12	7.34	7.80
Macquarie	6.12	7.34	7.80
Far West	5.55	5.95	6.20
Far West ($/ha)	25.99	27.89	29.04
Murray	6.34	7.60	8.99
Murrumbidgee	7.65	9.18	11.01
North Coast	8.14	8.85	9.30
Hunter	3.82	4.04	4.16
South Coast	3.22	3.35	3.48

K.1.3 Draft prices for groundwater (2010/2011$)

Table K.6 Groundwater Tariffs – Fixed Component of 2-Part Tariff ($/ML of Entitlement)

Valley	Price ($2010/11)		
	2012	2013	2014
Border	3.21	3.85	4.52
Gwydir	3.21	3.85	4.52
Namoi	3.21	3.85	4.52
Peel	3.21	3.85	4.52
Lachlan	4.01	4.29	4.52
Macquarie	4.01	4.29	4.52
Far West	4.07	4.29	4.52
Murray	3.42	4.11	4.52
Murrumbidgee	1.60	1.92	2.30
North Coast	3.68	3.74	3.78
Hunter	3.68	3.74	3.78
South Coast	3.68	3.74	3.78

Table K.7 Groundwater Tariffs – Usage Component of 2-Part Tariff ($/ML)

Valley	Price ($2010/11)		
	2012	2013	2014
Border	1.38	1.65	1.94
Gwydir	1.38	1.65	1.94
Namoi	1.38	1.65	1.94
Peel	1.38	1.65	1.94
Lachlan	1.72	1.84	1.94
Macquarie	1.72	1.84	1.94
Far West	1.74	1.84	1.94
Murray	1.47	1.76	1.94
Murrumbidgee	0.68	0.82	0.99
North Coast	1.68	1.70	1.72
Hunter	1.68	1.70	1.72
South Coast	1.68	1.70	1.72

Table K.8 Groundwater Tariffs – Entitlement Charges for Customers on a 1-Part Tariff ($/ML)

Valley	Price ($2010/11)		
	2012	2013	2014
Border	4.59	5.51	6.46
Gwydir	4.59	5.51	6.46
Namoi	4.59	5.51	6.46
Peel	4.59	5.51	6.46
Lachlan	5.74	6.12	6.46
Macquarie	5.74	6.12	6.46
Far West	5.81	6.12	6.46
Murray	4.89	5.87	6.46
Murrumbidgee	2.28	2.74	3.28
North Coast	5.36	5.44	5.50
Hunter	5.36	5.44	5.50
South Coast	5.36	5.44	5.50

Table K.9 Minimum Bill ($/annum)

Valley	Price ($2010/11)		
	2012	2013	2014
All	97.90	97.90	97.90

L Schedule of Monopoly Service Order outputs to 2014

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
C01			**Surface water information provision**	
C01-01	70%	9.6%	Surface water quantity monitoring	NOW is expanding its hydrometric network by 128 stations and will visit each of its 513 stations 6 times a year (up from the current level of 3.5). This activity includes surface water quantity monitoring, data collection (including environmental flows), data processing, data quality control, data archiving, data analysis and knowledge transfer.
C01-02	50%	1.2%	Surface water quantity data management and reporting	NOW will increase the percentage of its telemetered sites that have on-line information to 95% (up from the current level of 93%). This service relates to surface water quantity information that is compiled, stored, managed and reported to stakeholders and the general public.
C01-03	50%	1.6%	Surface water quality monitoring	NOW will sample 114 sites monthly and report results via the State Plan and the State of the Environment Report. Surface water quality monitoring covers system design, data collection/ monitoring, data archiving, data analysis, information provision and knowledge transfer. Covers water quality sampling and assessment of ambient condition and trend for salinity, temperature, turbidity, nutrients, pH.
C01-04	50%	0.7%	Surface water ecology, biology and algal monitoring	NOW will monitor 73 sites weekly to monthly for blue-green algal taxa cell count and biovolume (up from the current level of 69). This covers primarily activities that are not Water Sharing Plan related. This activity relates to surface water, including estuarine ecosystem monitoring on ecological/biological attributes of rivers, flood plains and wetlands - system design, data collection, data archiving, data analysis, information provision and knowledge transfer.

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
C01-05	50%	0.3%	Surface water quality and biological database management	NOW will move at least 80% of its data on surface water quality and biological monitoring programs into a new central database. This activity includes State-wide coordination and administration, intra and interstate liaison, data archive management, data archive reporting, systems development/maintenance/ upgrades, data quality reporting and quality accreditation responsibilities for surface water quality and biology monitoring.
C01-06	70%	1.0%	Surface water monitoring assets management	NOW will upgrade 5% of its proposed 480 NOW funded sites per year. This activity involves the maintenance and operation of structures, vehicles and equipment installed at gauging stations and other fixed monitoring sites (sensors, loggers, batteries, solar panels, etc), associated safety equipment, laptops field/mobile sensors.
C02			**Groundwater information provision**	
C02-01	100%	10.4%	Groundwater quantity monitoring	NOW will ensure that 80% of its proposed 3500 sites generate SWL data. This activity includes systems design, data collection, data archiving, data analysis, information provision and knowledge transfer. NOW collects quantity data from groundwater monitoring bores in order to enable effective groundwater resource management.
C02-02	100%	0.3%	Groundwater quality monitoring	NOW will ensure sampling of 10% of bores for water quality from 350 office funded sites. This activity incorporates groundwater quality monitoring systems design, data collection, data archiving, data analysis and information provision and knowledge transfer. Includes salinity and temperature by data loggers and spot sampling from bores.
C02-03	100%	0.1%	Groundwater database management	NOW will conduct monitoring and data management on 100% of 3800 sites. This activity includes corporate database administration, systems maintenance/upgrades and quality control/ assurance.

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
C02-04	100%	0.6%	Groundwater monitoring assets management	NOW currently does not upgrade any sites each year. NOW will upgrade 3% of its sites each year. NOW currently has 1% of new sites undergoing maintenance and 1% of sites on telemetry. NOW will achieve 10% for both of these measures for the end of the determination period. This activity includes the maintenance and operation of structures, vehicles and equipment installed at bore monitoring sites (sensors, loggers, batteries, solar panels etc), laptops, field/mobile sensors. Testing and calibration of hardware and software, sensor and instrument calibration and operation of technical workshops.
C03			**Surface and Groundwater Metering**	
C03-01	100%	0.0%	Metering Operations – User Owned	NOW will meter 5000 users. NOW says this is equivalent to 26% of users. NOW undertakes operation and maintenance of existing licence-holder-owned meters , meter reading and compliance.
C04			**Surface water and groundwater analysis**	
C04-01	50%	0.8%	Water quality analysis	NOW will complete 3500 algal tests in this determination period. This activity includes laboratory analytical services for water quality programs, and outsourcing of analysis as required.
C05			**Water modelling and impact assessment**	
C05-01	50%	3.5%	Water sharing/water management modelling	NOW will introduce surface water models capable of being used in the 2014 round of water sharing plan reviews and consistent with the Basin Plan. NOW aims to develop climate and runoff predictions to specific valleys. This activity includes surface water modelling for water sharing including: ▼ Water Sharing Plan development and implementation ▼ Murray-Darling Basin Plan ▼ climate variability and climate change

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
				▾ catchment change ▾ implementation of cap management strategy ▾ sustainable development projects ▾ threats to shared MDB resources ▾ environmental flow response modelling ▾ surface water – groundwater interaction.
C05-02	30%	0.1%	Resource assessments	NOW will develop new surface water models to test the range of scenarios that might be investigated and are capable of providing the information required on demand for water resource assessments. This activity includes modelling for water resource assessment of projects/ schemes: ▾ Programs of works performance in meeting salinity targets. ▾ Impacts of water trade on salinity and reliability. ▾ MDBC salinity register compliance. ▾ River, storage management for SWC. ▾ Water recovery options/ projects – TLM, NWI, Water for Rivers (Snowy) and other clients.
C05-03	100%	0.9%	Water balances/accounting	NOW will develop surface water models that are capable of being used in the 2014 round of water sharing plan reviews. Models will be capable of providing information required on demand for water resource assessments. This activity involves development and administration of surface water balances and accounting systems for State, Murray-Darling Basin and National Strategies including: ▾ NWI requirements ▾ hydrologic model maintenance ▾ MDBMC cap auditing including model accreditation ▾ Water Sharing Plan auditing ▾ Cross-border water trade - assessment of trading rules ▾ development of water modelling software and application to valley models

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
				▾ eWater CRC (model development).
C05-04	100%	1.0%	Groundwater modelling	NOW will develop groundwater models capable of being used in the 2016 round of water sharing plan reviews. It will construct groundwater models for all groundwater WSPs. This activity involves groundwater modelling associated with development and administration of groundwater water balances and accounting for: ▾ development of groundwater models ▾ water accounting – groundwater interaction assessment of groundwater trading impacts and protocols ▾ groundwater modelling for structural adjustment process ▾ groundwater modelling for review of current WSP's ▾ groundwater models for development of new water sharing plans ▾ MDB Basin Plans.
C06			**Water Sharing Plan implementation**	
C06-01	100%	4.7%	Systems operation and water availability management	NOW will review all implementation plans annually. NOW will continue to publish AWDs for all water sources by 1 July. NOW's systems operation for water planning includes: ▾ preparation and maintenance of implementation manuals specifying procedures to be undertaken to deliver provisions of WSPs, including reporting and auditing requirements ▾ review and amendment of implementation programs for each WSP, detailing deliverables and associated timetable ▾ oversight of system operation by SWC and ensuring compliance with requirements

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
				specified in WSP rules ▼ operational monitoring, announcements, etc. on unregulated rivers and groundwater. Water availability management for water planning includes: ▼ Assessment of compliance with long-term extraction limit and development of growth in use response strategies. ▼ Available water determinations. ▼ Supplementary water announcements ▼ Groundwater recharge review model development. ▼ GDE studies, investigations and identification required during plan life.
C06-02	100%	3.5%	Trading and Accounts Management	NOW will achieve a reduction in the number of account holder's letters of complaint regarding water account transactions from a current 100 per annum to 50 per annum, or 2% down to 1%. This activity covers trading (dealings) rules to ensure integrity of trading, including: ▼ administration of constraints within the water source ▼ administration of changes to water source ▼ determination of conversion factors ▼ implementation of controlled allocation processes. Management of water accounts to comply with plan rules, including: ▼ oversight of water allocation account management ▼ management of extraction conditions and audit of extractions ▼ general groundwater advice ▼ application of spill and carryover rules to water accounts.
C06-03	50%	5.4%	Plan performance monitoring	9 regulated water sources will have a monitoring plan.

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
			and reporting	100% of regulated WSPs will have an ecological monitoring program in place. NOW will have 100% of high priority water sharing plan areas with ecological performance monitoring implemented and reported. 100% of high priority unregulated river Water Sharing Plans will have low flow field verification implemented and reported. Plan monitoring and reporting includes: ▼ monitoring of planned environmental water outcomes ▼ reporting on WSP performance indicators for annual reviews, for five-year review by State Interagency Panel and 10-year review by NRC ▼ ecological evaluation of plan performance including monitoring activities (e.g. IMEF recurrent) ▼ field verification of CtP ▼ program evaluation of WSPs and WMA 2000 ▼ compiling information reports to support NRC reviews of WSPs ▼ socio-economic assessment of impacts of WSPs ▼ monitoring of structural adjustment impacts ▼ activities associated with any amendments in WSPs.
C06-04	50%	0.4%	Blue-green algae management	NOW will update all regional risk management plans. This activity comprises mitigating effects of water stored in major storages (i.e. reduced flushing flows), involving coordination of regional algal responses. Functions provided by regional algal coordinating committees (RACCs) and technical support to them, including:

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
				▼ weekly, fortnightly or monthly algal alerts for freshwater events (blue-green algae) ▼ alerts for marine and estuarine events as required ▼ development of contingency plans ▼ maintenance of an algal information line and website ▼ training and awareness of management authorities (including councils) ▼ coordination of media response to algal events ▼ coordination of scientific advice for each event.
C07			**Water Management planning**	
C07-01	70%	5.3%	Water sharing plan development	NOW will gazette 83 water sharing plans by 2014 NOW will complete the water sharing planning process and its implementation by: ▼ completing the remaining 18 inland Water Sharing Plans by 2013 ▼ completing the 20 remaining coastal valley Water Sharing Plans by 2013 ▼ revising all existing Water Sharing Plans for Murray Darling Basin River resources by 2014 to enable 'accreditation' of existing plans with the Basin Plan ▼ reviewing and remaking a total of 31 existing Water Sharing Plans before 2014, prior to their 10 year expiry date NOW's WSP development activities include: ▼ interagency and stakeholder negotiations relating to development of water sharing provisions ▼ policies specifically related to development of water sharing provisions ▼ estuary licensing rules ▼ preparation of statutory documentation ▼ preparation of initial implementation programs for each WSP, detailing deliverables and associated timetable post commencement ▼ scientific and socio-economic studies required to support WSP development ▼ spatial data layer compilations and cartography.

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
C07-02	75%	11.5%	Operational Planning	NOW's Operational planning will publish: ▼ floodplain harvesting planning and rules for issuing licences ▼ delivery capacity rights (extraction component of licence to share channel capacity) ▼ water use planning ▼ return flow crediting for extractive users ▼ develop rules and processes for controlled allocation of unassigned water to licensed users ▼ reasonable use guidelines and proliferation of basic landholder rights to ensure water is shared equitably with licensed users ▼ aquifer interference rules and guidelines to inform and manage licensed extractive industries ▼ planning rules for surface and groundwater interception and extraction ▼ planning rules for stormwater harvesting ▼ planning rules for groundwater trading in embargoed water sources.
C07-04	50%	2.0%	Cross-border and national commitments	NOW will ensure that 100% of valleys comply with the MDB cap. These activities are to support operation of the water management framework, including: ▼ development and implementation of operational programs to meet NWI commitments ▼ participation in relevant interstate committees progressing NWI commitments, including National Water Accounting Development Committee, NWI Metering Expert Group, National Water Knowledge and Research Strategy group, national water quality management group, national river health negotiations and national assessment ▼ development and implementation of NSW commitment to Living Murray Initiative ▼ development and implementation of programs for National Groundwater Committee support to Natural Resource Management Ministerial Council ▼ NSW contribution to MDB sustainable rivers audit

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
				▾ MDBMC cap monitoring and reporting ▾ participation in COAG water reform process ▾ participation in interstate water trade negotiations ▾ development of interstate water sharing arrangements through MDB and Border Rivers Agreement, Snowy and ACT arrangements ▾ local water utilities – developing strategies to improve water supply and wastewater services in remote communities, as required by NWI.
C07-05	30%	0.5%	Water Industry Regulation	NOW will achieve legislation that is capable of meeting the requirements of the COAG reform agenda. It will achieve a target of 100% of water entitlement being covered by the Water Management Act This activity comprises legal and regulatory support for water management planning, including litigation and legislative advice: ▾ advice on compliance actions, litigation against licence holders and other water users ▾ facilitating appeals by licence holders and other water users ▾ advice on legal aspects and implication of draft and final WSPs ▾ advice on the Office's documentation used for water management regulation (e.g. licence application forms) ▾ advice to Government on regulatory and legislative proposals ▾ review and drafting of water availability orders to support operational decisions (for C06) ▾ review and drafting of water regulations & orders
C08			**River management works (non-capital)**	
C08-01	50%	1.2%	River management works	NOW will manage 30 000 metres of river bank for erosion control. In terms of highly impacted riverbank protected it aims to stabilise/protect 100% of high priority areas. This activity involves management and works plans for repair and stabilisation of river and channel banks and beds to maintain their integrity and flow capacity, and other watercourse works.

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
C09			**Water consent administration**	
C09-01	100%	7.5%	Licence administration	NOW will administer 100% of licensing transactions through a single database. These are comprised of: ▾ Licensing Administration System (LAS) administration, including maintenance of surface water and groundwater consents integrity consistent with the Office's statutory responsibilities in regulating water extraction. Excludes processing of transactions on consents ▾ administration of access licence, approvals, trading and environmental water registers ▾ systems development and maintenance of procedures and guidelines for access licence dealings, approvals transactions, monitoring of systems performance and information dissemination ▾ LAS systems maintenance/upgrade
C09-02	100%	3.2%	Licence conversion and entitlement specification	90% of access licenses will be recorded on the public registers within 5 months of the implementation of the water sharing plan. Licence conversion includes: ▾ cleansing of licences for conversion to WMA ▾ volumetric conversions ▾ transcribing water sharing provisions into licence conditions Entitlements specification includes: ▾ ongoing program of establishing entitlements allocations for town water licences and determination of new entitlements when requested by councils ▾ S66 reviews.
C09-03	100%	12.2%	Compliance	70% of licences currently audited are in compliance with licence requirements. NOW will progress towards 100% of licenses audited being in compliance with licence requirements. It will increase its auditing level from 0.5% of total licences audited to 1% and will action100% of breach reports up from the current level of 50%.

Cost code	User Share	% of User Share Revenue	Title	Detailed Description and Service Output
				NOW's compliance activities include: ▾ administration of monitoring activities and surveillance to check compliance with consent conditions, including audits, fieldwork, inspections and compliance checking ▾ enforcement, including prosecution for non-compliance with consent conditions for all licence holders ▾ litigation against licence holders and other water users for non-compliance ▾ dissemination of information on rights, responsibilities and consequences for non-compliance with consent conditions.
C09-04	100%	4.7%	Consent transaction overhead	This activity includes overhead costs associated with water consent transactions
C10			**Water consent transaction**	
C10-01	100%	0.0%	Water Act 1912 consents transactions	NOW will process 90% of other consents for permanent transfer of access licenses within 28 working days. It will process 60% of other consents within 3 months. This activity applies to dealings, assessments, change of conditions and new applications for water licences and approvals undertaken on a fee for service basis, including licensing of irrigation and other industry activities, controlled activities and aquifer interference activities.
C11			**Business administration**	
C11-01	100%	4.7%	Metering and billing water usage	NOW will collect 95% of revenue within 3 months of the billing period. This activity includes water management reporting required by stakeholders, including IPART, ACCC and NWI. Billing administration, revenue collection, maintenance of metering and billing SLAs for unregulated rivers and groundwater. Maintenance of pricing database, and responding to queries, correspondence, briefings.
C11-02	70%	1.1%	Business development	NOW will achieve 100% participation in State Water's valley Customer Service Committees. This activity includes planning to support implementation of water management business function, including strategic, organisational, financial, human resource and corporate governance requirements. Preparation of complete and QA checked pricing submissions for IPART, submitted by the due date.

M IPART's decision on the WACC

The economic – or opportunity – costs of NOW's services include the cost of capital of the assets employed. This represents the value that society could have obtained by using those assets and resources for other purposes.

There are several approaches to calculate the cost of capital on the regulated asset base (RAB). Our preferred approach is to use the weighted average cost of capital (WACC) to determine an appropriate range for the cost of capital. A point estimate of the WACC is selected from this range. The WACC for a business is the expected cost of its various classes of capital (debt and equity), weighted to take into account the relative share of debt and equity in the total capital structure.

In making our draft decision for the WACC, we considered and made decisions on a number of input parameters to determine the appropriate range for the WACC. We then made a decision on the appropriate point within the range.

Earlier this year, we concluded a review on a number of issues regarding our approach to setting the WACC.[156] This draft decision for NOW has been calculated according to our final decision on the WACC. We are also currently developing our approach to estimate the debt margin. We expect to release a discussion paper to consult on our preliminary findings in October this year. We expect that this review will influence our approach to estimating the debt margin for the NOW final decision.

This appendix:

- provides an overview of our draft decision on the WACC for NOW
- summarises submissions from NOW and stakeholders
- details our approach to setting the WACC parameters.

M.1 Overview of IPART's draft decision on the WACC for NOW

Draft decision

22. Our draft decision is to use a real pre-tax WACC of 7.0% in estimating the economic cost of the services provided by NOW.

[156] IPART, *IPART's weighted average cost of capital – Final decision*, April 2010.

Our draft decision is to apply a real pre-tax WACC of 7.0% for the NOW draft decision. This is the midpoint of the range of 5.8% to 8.2%. The parameter valuations adopted in this decision are detailed in Table M.1. We welcome stakeholder comments on these draft decisions.

Table M.1 Draft decision on the cost of capital and the parameters used to calculate the WACC

WACC Parameter	NOW's proposal	IPART draft decision
Nominal risk free rate[a]	4.3%	5.2%
Inflation[a]	2.5%	2.7%
Market risk premium	6.0%	5.5% - 6.5%
Debt margin[a]	3.15%	1.9% - 3.7%[b]
Debt to total assets (gearing)	30%	60%
Dividend imputation factor (gamma)	0.4	0.5 – 0.3
Tax rate	30%	30%
Equity beta	0.9	0.8 – 1.0
Cost of equity (nominal post tax)	9.8%	9.6% - 11.7%
Cost of debt (nominal pre-tax)	7.5%	7.0% – 8.8%
WACC range (real pre-tax)	NA	5.8% – 8.2%
WACC (real pre-tax) mid-point	**7.9%**	**7.0%**

a Reflects market data sampled over the 20 days to 16 August 2010. These will be updated to reflect market conditions at the time of the final decision.

b Includes debt raising costs of 12.5 basis points.

Source: NOW submission to IPART, December 2009, p 33, State Water submission p 5-4, Bloomberg, IPART analysis.

M.2 NOW's proposal

IPART's 2006 Determination did not provide an allowance for return on capital in NOW's prices. NOW has requested that a rate of return is included in prices for the upcoming determination period and has proposed a real pre-tax WACC of 7.9%, as shown in Table M.1. NOW has proposed the same WACC as sought by State Water. NOW has not provided new evidence to support this proposal and submits:

> …the justification for this rate is included in State Water's submission to IPART.[157]

[157] NOW submission to IPART, December 2009, p 33.

State Water's proposal sought changes to the level of gearing and the asset beta due to its exposure to revenue volatility. We considered this issue in detail over the course of the 2010 State Water price review. We concluded that it was appropriate to provide State Water with a WACC that excluded business-specific risk (such as revenue volatility), consistent with financial theory. As noted in our final decision for State Water:

> Our established practice is to set the rate of return with reference to the weighted average cost of capital for a benchmark utility and exclude business-specific risk including revenue volatility.[158]

Similarly, our draft decision for NOW excludes business-specific risk. We have considered whether it is appropriate to include an allowance for revenue volatility in NOW's cashflows in Chapter 4.

M.3 Stakeholder submissions

Submissions from NOW's customers so far strongly oppose the inclusion of a rate of return on NOW's prices.

Stakeholders including the Gwydir Valley Irrigators Association, Macquarie River Food and Fibre and the Local Government Association of NSW oppose the inclusion of a return on capital on the grounds that NOW is a government agency that is performing administrative and regulatory functions which are not performed on a commercial basis. For example, the Local Government Association of NSW submits:

> The Associations oppose the inclusion of a rate of return on capital…on the basis that water management activities are a regulatory function of government and that it is inappropriate for regulatory functions to be performed on a commercial basis. That is, full cost recovery in this instance should not include a rate of return on capital.[159]

Similarly, stakeholders including Bega Cheese[160] and the NSW Irrigators Council[161] have argued that NOW should not earn a rate of return any more than other public services, such as schools, hospitals and police should. Bega Cheese and the NSW Irrigators Council also submit that allowing NOW to earn a return on capital is akin to introducing a tax.

We have included a rate of return in the draft decision to signal the economic costs of the services provided by NOW. This signals to consumers the opportunity cost of capital invested and ensures that efficient investment in capital will continue into the future to renew infrastructure and provide for growth.

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158 IPART, *Review of bulk water charges for State Water Corporation - Final Report*, June 2010, p 53.
159 Local Government Association of NSW submission to IPART, April 2010, p 3.
160 Bega Cheese submission to IPART, p 1.
161 NSW Irrigators Council submission to IPART, p 14.

We had concerns about the quality of information we received for the current determination period. As described in Chapter 4, we set the RAB to zero at 1 July 2011 to ensure that NOW will not earn a return on expenditure where there was insufficient evidence that it had been efficiently incurred. Our approach ensures that NOW will earn an appropriate return *only* on efficient expenditure.

M.4 IPART's approach to setting the WACC parameters

M.4.1 Nominal risk free rate and inflation

We have calculated the nominal risk free rate as the 20-day average of the yield on nominal Commonwealth Government bonds. The inflation adjustment has been obtained from swap market data sampled over the 20-day sampling period. Table M.2 sets out the resulting values.

Table M.2 Risk free rate and inflation adjustment

Parameter	Value
Nominal risk free rate	5.2%
Inflation adjustment	2.7%

Source: Bloomberg.

M.4.2 Debt margin

We have set the debt margin for the draft decision with reference to our current universe of securities. Table M.3 details the composition of this sample and the yields over the 20-day period.

The lower and upper bounds of the debt margin have been established using the lowest and highest average bond yields respectively (plus debt raising costs of 12.5 basis points).

Table M.3 Current universe of securities

Security	Average yield to 16 August 2010 (basis points)
GPT (22 Aug 2013)	174
Santos (23 Sep 2015)	353
Snowy (25 Feb 2013)	318
Bloomberg BBB fair value curve (7 years)	356

Note: excludes debt raising costs.

Source: Bloomberg.

Table M.3 shows that the lower bound is established by yields on the GPT bond. We note that Standard and Poor's has upgraded the credit rating of this bond from BBB+ to A-. However we note that the GPT bond has a:

- Moody's rating of Baa1
- Bloomberg composite rating of BBB+.[162]

As noted above we are currently reviewing our approach to set the debt margin. Currently, our approach is to set a debt margin to represent the margin over the risk free rate of BBB/BBB+ rated debt, without specifying the source of this rating.

According to APRA, the Baa1 Moody's rating is equivalent to the Standard and Poor's and Fitch Ratings BBB+ rating.[163] Therefore we have continued to include the GPT bond in our current universe of securities to determine the debt margin. We expect that our findings from our parallel review on the debt margin will inform our final decision for NOW.

M.4.3 Beta and gearing

NOW's proposal included adjustments to the level of gearing and the asset beta[164] to compensate for revenue volatility. As noted above, we do not consider it appropriate to compensate for business-specific risk through the WACC. NOW has not provided any further evidence to support this proposal.

As was the case in our recent decision for State Water, we consider that it is appropriate to adopt our standard level of gearing and equity beta for water businesses. We conclude that a 60% gearing assumption and an equity beta within the range of 0.8 to 1.0 is appropriate to estimate the cost of capital for a benchmark bulk water business.

M.4.4 Market risk premium, gamma and tax rate

NOW's proposal adopts the midpoint of our standard valuation for the market risk premium and the dividend imputation factor (gamma). NOW has proposed our standard value for the tax rate. Our draft decision adopts:

- a market risk premium of 5.5% to 6.5%
- a gamma value of 0.5 to 0.3
- a tax rate of 30%.

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[162] We note that Bloomberg is not a credit rating agency. Bloomberg has advised that the composite rating is the average of all ratings available for a security from credit rating agencies, rounded down to the lower rating in case the composite is between 2 ratings. Sourced from Bloomberg, 10 August 2010.

[163] http://www.apra.gov.au/Policy/upload/APG120_Dec-09_final-draft.pdf

[164] The asset beta is a function of gearing and the equity beta. We use the Monkhouse formula.

N Consent transaction charges

N.1 Detailed description of the types of consent transaction charges

N.1.1 New Water Access Licences (WAL)

A Water Access Licence entitles its holder to specified shares in the available water within a specified water management area or from a specified water source and to take water at specified times, rates, circumstances and areas/locations. There are 3 main types of water access licences which may be granted. These are described below.

Zero share

A zero share water access licence does not entitle the holder to any shares in the available water in a specified water management area. However, the holder may trade water into the water access licence through a permanent or temporary dealing.

Specific Purposes

There are 3 specific purpose water access licences: domestic and stock, aboriginal cultural and town water supply.

Domestic and stock

A water access licence for domestic and stock entitles the holder to have right to a share of the available water from a river or lake where the applicant has no river frontage (require right to occupy the site to extract water).

Aboriginal cultural

Aboriginal communities can apply for a water access licence for cultural purposes such as manufacturing traditional artefacts, hunting, fishing, and gathering, and recreation, cultural and ceremonial purposes. An aboriginal cultural licence can also be used for drinking, food preparation, washing and watering domestic gardens.

Town water supply

These licences are generally larger allocations for mostly committed systems, either surface water or groundwater.

New licences determined by the minister

There is expected to be 4 types of licences that can be issued at the direction of the minister: controlled allocations, Great Artesian Basin (GAB) conveyance, floodplain harvesting and tidal pools. These are described below.

Controlled allocations

Water access licences may become available under a controlled allocation order. Under this order the government may make licences available in a specific water source through a tender or auction process.

Great Artesian Basin (GAB) conveyance

This water access licence applies to stock and domestic access licences where the licence holder uses open bore drains rather than piped water to receive their allocations. Stock and domestic rights holders have right to water but not a right to the highly inefficient use of water which occurs through transportation of water through open bore drains. To encourage the piping of water, stock and domestic rights holders will hold licence representing the water losses. Once the water is piped, the basic rights holder will no longer have to hold this conveyance licence.

Floodplain harvesting

This water access licence applies to the harvesting of flood waters using structures such as levees, dams and channels that capture passing floodwaters. NOW is currently exhibiting its flood plain policy.

Tidal pools

This water access licence applies to a share of water from an estuarine tidal pool, where the quality of water is fresh or less saline (depending on the hydrology and tidal impacts). Water is mainly fresh in the upper sections when the river flow is greater. Water becomes saline during high tide and when the river flow is low. Under the Water Act, licences are not required to take water from saline tidal pools. Under the Water Management Act, the water sharing plans extend to the tidal limit and therefore some activities that were not previously licensed will require a licence. NOW has estimated that in the Hunter and North Coast that there are up to 300 landholders extracting water from tidal pools.

N.1.2 Water Access Licence Dealings

Water access licence dealings under the Water Management Act include the trading of water access licences, as well as any change to water access licences on the Water Access Licence Register.

- Permanent dealings – regulated rivers, unregulated rivers and ground water
  - Assign share components - shares are transferred from one access licence to another
  - Nominate works – access licence nominates works to extract water from a different location
- Temporary dealings – unregulated rivers and groundwater – water in the access licence account is transferred to another account of an access licence. Transferred water to be extracted from the receiving licence and the works nominated by that licence.

N.1.3 New or amended approvals

- A **water use approval** confers a right on its holder to use water for a particular purpose at a particular location, ie, approval for irrigation and other agricultural purposes.
- A **water supply work approval** authorises its holder to construct and use a specified water supply work at a specified location, ie, approval to construct a pump, dam or bore for irrigation, industrial or commercial purposes
- A **basic rights work approval** authorises its holder to construct a bore to be used solely for domestic and stock purposes

N.1.4 Approval extensions

Approvals are granted for 10 years. Approvals need to be renewed every 10 years.

N.2 Key legislation to be considered by NOW

Table N.1 describes the 2 NSW statutes which NOW must consider when assessing consent transactions.

Table N.1 Key legislation NOW must consider when assessing consent transactions

NSW Acts	Matters to consider
Water Management Act 2000[a]	▼ Consideration of the third party impacts of consent transactions on different users including the environment increases the complexity of water resource management. ▼ Consider the cumulative impacts of water management licences and approvals and other activities on water sources and their dependant ecosystems.
Environmental Planning and Assessment Act 1979	▼ Consider all matters affecting or likely to affect the environment due to that activity. ▼ Consider whether the consent transaction will affect a critical habitat and whether there is likely to be significant affects on species, populations or ecological communities or those habitats. Where the consent transaction is likely to cause impact to the environment, NOW must conduct environmental impact assessments considering the natural, social and economic aspects before making a decision on the consent transaction.

a The *Water Management Act 2000* governs the issue of new water licences and the trade of water licences and allocations for those water sources (rivers, lakes and groundwater) in NSW where water sharing plans have commenced. The water sharing plans set rules for access to water to ensure that water is shared between the environment, towns and cities, and farmers and industries as well as for Aboriginal cultural activities.

Source: Correspondence received from NOW

Other Statutes include:

- Native Titles Act 1993 (Commonwealth)
- Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth)
- Regulations
- Orders
- Access licence dealings principles
- Water sharing plan rules.

N.3 NOW's revised submission

Table N.2 is the revised estimated hours per transaction for the forecast regulatory period. The key changes include:

- Approval extensions: NOW created 2 separate charges based on whether the extension approval is submitted before or after its expiry date
  - Before expiry: original estimate reduced by 25%
  - After expiry: original estimate increased by 25%
- Water access dealings – temporary trades – provided separate estimate.

Table N.2 NOW's revised estimated hours per transaction for forecast regulatory period

				Special Assessments			
	Administration Labour	Advertising Labour	Basic Assessment	$ per unit entitlement > 20 Unit Entitlements	$L/s for pumps > 50 L/s capacity	$ per Ha > 10 Hectares	Dams
New water access licences							
Zero Share	4.75						
Specific Purpose	4.75		4.75	0.38			
New licences (eg floodplain, GAB, estuarine)	4.75		4.75	0.38			
Water access licence dealings							
Dealings - regulated rivers	4.75		1.90				
Dealings - unregulated rivers and groundwater	4.75		7.60	0.38			
Water allocation assignments (temp trade)							
Unregulated rivers and groundwater	2.00		2.00				
New or amended approvals							
Works only	4.75	1.52	9.50		0.16		9.50
Use only	4.75	1.52	9.50			0.33	
Works and use	4.75	1.52	9.50		0.16	0.33	9.50
Basic rights work approval	4.28						
Approval extensions							
Extension - lodged before expiry date*	2.85						
Extension - lodged after expiry date*	4.75						

Table N.3 NOW's revised forecast transactions

				Special Assessments			
	Administration Labour	Advertising Labour	Basic Assessment	$ per unit entitlement > 20 Unit	$L/s for pumps > 50 L/s capacity	$ per Ha > 10 Hectares	Dams
New water access licences							
Zero Share	433						
Specific Purpose	200		200	24			
Other	50		50	6			
Water access licence dealings							
Dealings - regulated rivers	400		400				
Dealings - unregulated rivers and groundwater	460		460	368			
Water allocation assignments (temp trades)							
Unregulated rivers and groundwater	60		60				
New or amended approvals							
Works only	613	613	613		129		98
Use only	104	104	104			38	
Works and use	443	443	443		93	164	71
Basic rights work approval	4,185		4,185				
Approval extensions							
Before expiry	1,980						
After expiry	1,320						
Total forecast transactions	10,188	1,160	6,455	398	222	202	169

Source: NOW's consent transaction charges model.

N.4 Average unit costs of labour applicable to consent transaction charges

We used the mid point of the salary scales applicable for each function and applied the Crown Employee's Award Rates that apply from 1 July 2010. To build up the costs we used a yearly hourly rate of 1826.6 hours, and then applied a factor of 26.60% for on-costs (eg, superannuation, long service leave, payroll tax and workers compensation). The salary rates applicable and our assumptions are shown in Table N.4.

Table N.4 Crown Employees (Administrative and Clerical Officers) Salary Rates as at 1 July 2010

GRADE	Annual Salary	Raw Hourly rate	Hourly with On Costs
Grade 1	53,636.00	29.36	37.17
Grade 2	56,644.00	31.01	39.25
Grade 3	60,005.00	32.85	41.58
Grade 4	63,781.00	34.92	44.20
Grade 5	70,929.00	38.83	49.15
Grade 6	75,870.00	41.54	52.57
Grade 7	80,479.00	44.06	55.77
Grade 8	86,498.00	47.35	59.94
Grade 9	91,580.00	50.14	63.46
Grade 10	98,159.00	53.74	68.02
Grade 11	107,394.00	58.79	74.42
Grade 12	119,149.00	65.23	82.56
IPART Assumptions			
For Admin Functions use	Grade 6		52.57
For Advertising use	Grade 4		44.20
For Basic Assessment	Grade 8		59.94
For Special Assessment	Grade 10		68.02
On-costs			26.60%

O Impact of changes to the cost allocation method, entitlement volumes and usage volumes on bills and prices in 2013/14

This appendix contains 3 tables that demonstrate the impact on prices of our decisions relating to:

- the method of allocating costs to valleys
- entitlement volumes, and
- usage forecasts.

Each table shows how the change in cost allocation methodology, entitlement volume, or usage forecast has impacted upon forecast bills, fixed charges, and usage charges, respectively. These prices assume that:

- all other variables remain constant, and
- the 20% cap on forecast annual increases in bills as applied by IPART in determining draft prices has been applied.

The following worked examples demonstrate how these tables are to be read.

Example 1: Impact of the cost allocation methodology on forecast bills for regulated river users in the Gwydir valley

Table O.1 shows that, holding all other variables constant, the impact of the cost allocation method has been to increase forecast bills for regulated river users in the Gwydir valley from $1.61 to $1.76 per ML by 2013/14 (an increase of 9%). The change in cost allocation methodology has, therefore, attributed a larger share of NOW's water resource management costs to regulated river users in the Gwydir valley than for the 2006 Determination.

Example 2: Impact of the change in entitlement volumes on fixed charges for unregulated river users in the Macquarie valley

Table O.2 shows that under the entitlement volumes used in the 2006 Determination, fixed charges for unregulated river users in the Macquarie valley would be $2.92 per ML by 2013/14, assuming that all other variables remain unchanged. For this 2011 determination, however, entitlement volumes for these users have declined relative to those used to set prices in 2006 (see Chapter 8).

Holding all other variable constant, this reduction in entitlement volumes has the effect of increasing fixed charges for unregulated river users in the Macquarie valley by 82%, to $5.30 per ML.

Example 3: Impact of the change in usage forecasts on usage charges for groundwater customers in the Murrumbidgee

Table O.3 shows the impact of the change in usage forecasts on usage charges for groundwater customers in the Murrumbidgee. Using the usage forecasts applied in the 2006 Determination, usage charges would be $1.13 per ML by 2013/14. Holding all other variables constant, IPART's draft decision on usage forecasts for groundwater results in usage charges of $0.96 per ML by 2013/14. This represents a decrease of 15% as a result of the change in forecasts.

O Impact of changes to the cost allocation method, entitlement volumes and usage volumes on bills and prices in 2013/14

Table O.1 Impact of cost allocation method on forecast bills by 2013/14 ($2009/10)

Water Type	IPART Valley	Forecast bill (2006 allocation)	Forecast bill (IPART's draft)	Increase (%)
Regulated	Border	3.31	2.99	-9%
	Gwydir	1.61	1.76	9%
	Namoi	3.06	3.54	16%
	Peel	2.22	3.01	36%
	Lachlan	1.70	2.40	41%
	Macquarie	2.09	2.55	22%
	Murray	2.03	1.93	-5%
	Murrumbidgee	1.55	1.58	2%
	North Coast	5.48	5.48	0%
	Hunter	2.33	3.52	51%
	South Coast	6.45	6.45	0%
	REG. Total	1.95	2.16	11%
Unregulated	Border	2.96	4.81	63%
	Gwydir	2.96	4.81	63%
	Namoi	2.96	4.81	63%
	Peel	2.96	4.81	63%
	Lachlan	8.55	7.56	-11%
	Macquarie	8.55	7.56	-11%
	Far West	9.40	6.01	-36%
	Murray	8.39	8.72	4%
	Murrumbidgee	8.27	10.69	29%
	North Coast	10.40	9.02	-13%
	Hunter	3.04	4.03	32%
	South Coast	3.64	3.38	-7%
	UNREG Total	5.10	5.11	0%
Groundwater	Border	6.41	6.27	-2%
	Gwydir	6.41	6.27	-2%
	Namoi	6.41	6.27	-2%
	Peel	6.41	6.27	-2%
	Lachlan	6.55	6.27	-4%
	Macquarie	6.55	6.27	-4%
	Far West	6.55	6.27	-4%
	Murray	6.55	6.27	-4%
	Murrumbidgee	3.19	3.19	0%
	North Coast	8.60	5.33	-38%
	Hunter	8.60	5.33	-38%
	South Coast	8.60	5.33	-38%
	GW TOTAL	6.99	6.07	-13%
Total		3.29	3.29	0%

Table O.2 Impact of entitlement volumes on fixed charges by 2013/14 ($2009/10)

Water Type	IPART Valley	Fixed charges (2006 entitlement volumes)	Fixed charges (IPART's draft)	Increase (%)
Regulated	Border	2.09	2.10	0%
	Gwydir	1.23	1.23	0%
	Namoi	2.48	2.48	0%
	Peel	2.12	2.11	0%
	Lachlan	1.68	1.68	0%
	Macquarie	1.79	1.78	0%
	Murray	1.38	1.35	-2%
	Murrumbidgee	1.08	1.10	3%
	North Coast	5.07	5.04	-1%
	Hunter	2.46	2.46	0%
	South Coast	4.53	4.51	0%
	REG. Total	1.51	1.52	0%
Unregulated	Border	3.45	3.37	-2%
	Gwydir	3.45	3.37	-2%
	Namoi	3.45	3.37	-2%
	Peel	3.45	3.37	-2%
	Lachlan	2.92	5.30	82%
	Macquarie	2.92	5.30	82%
	Far West	3.83	4.21	10%
	Murray	5.53	6.11	10%
	Murrumbidgee	6.61	7.48	13%
	North Coast	6.77	6.32	-7%
	Hunter	6.04	2.08	-66%
	South Coast	7.17	2.04	-72%
	UNREG Total	5.65	3.22	-43%
Groundwater	Border	2.68	4.39	64%
	Gwydir	2.68	4.39	64%
	Namoi	2.68	4.39	64%
	Peel	2.68	4.39	64%
	Lachlan	2.68	4.39	64%
	Macquarie	2.68	4.39	64%
	Far West	2.68	4.39	64%
	Murray	2.68	4.39	64%
	Murrumbidgee	1.96	2.23	14%
	North Coast	6.52	3.67	-44%
	Hunter	6.52	3.67	-44%
	South Coast	6.52	3.67	-44%
	GW TOTAL	3.01	4.23	41%
Total		2.39	2.31	-4%

O Impact of changes to the cost allocation method, entitlement volumes and usage volumes on bills and prices in 2013/14

Table O.3 Impact of usage forecasts on usage charges by 2013/14 ($2009/10)

Water Type	IPART Valley	Usage charges (2006 usage forecasts)	Usage charges (IPART's draft	Increase (%)
Regulated	Border	1.14	1.61	41%
	Gwydir	0.91	1.13	25%
	Namoi	1.19	1.70	43%
	Peel	3.10	3.34	8%
	Lachlan	1.72	1.93	13%
	Macquarie	1.33	1.71	28%
	Murray	0.70	0.88	26%
	Murrumbidgee	0.67	0.71	6%
	North Coast	4.59	4.99	9%
	Hunter	1.67	1.58	-5%
	South Coast	5.04	5.05	0%
	REG. Total	0.92	1.09	18%
Unregulated	Border	1.72	1.44	-16%
	Gwydir	1.72	1.44	-16%
	Namoi	1.72	1.44	-16%
	Peel	1.72	1.44	-16%
	Lachlan	1.56	2.27	45%
	Macquarie	1.56	2.27	45%
	Far West	2.72	1.80	-34%
	Murray	2.87	2.62	-9%
	Murrumbidgee	2.98	3.21	7%
	North Coast	3.62	2.71	-25%
	Hunter	3.23	1.96	-40%
	South Coast	4.39	1.34	-70%
	UNREG Total	3.20	1.89	-41%
Groundwater	Border	2.27	1.88	-17%
	Gwydir	2.27	1.88	-17%
	Namoi	2.27	1.88	-17%
	Peel	2.27	1.88	-17%
	Lachlan	2.39	1.88	-21%
	Macquarie	2.39	1.88	-21%
	Far West	2.39	1.88	-21%
	Murray	2.39	1.88	-21%
	Murrumbidgee	1.13	0.96	-15%
	North Coast	5.59	1.67	-70%
	Hunter	5.59	1.67	-70%
	South Coast	5.59	1.67	-70%
	GW TOTAL	2.69	1.84	-32%
Total		1.55	1.44	-7%

P Glossary

2005 review	IPART's review for the 2005 determination period
2006 Determination	Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010 (Determination No 4, 2006)
2006 Determination period	The period from 1 October 2006 to 30 June 2010, as set in the 2006 Determination
2011 Determination	The period commencing 1 July 2011 and extending to 30 June 2014. Also refers to the legal pricing determination set by us that applies to the same period
2011 Determination period	The period from 1 July 2011 to 30 June 2014, as set in the 2011 Determination
AWD	Available Water Determination
basin	Murray-Darling basin
CIE	Centre for International Economics
CMA	Catchment Management Authorities
COAG	Council of Australian Governments
CPI	Consumer Price Index
CSIRO	The Commonwealth Scientific and Industrial Research Organisation
current determination	The period from 1 October 2006 to 30 June 2010, as set in the 2006 determination. The period from 1 July 2010 to 30 June 2011 is also covered under the current determination due to delays in information provision from NOW causing a delay in the release of the 2011 Determination
BRC	Border Rivers Commission
DECCW	NSW Department of Environment, Climate Change and Water
Determination	The price limits set by the Tribunal
DEWHA	Commonwealth Department of Environment, Water, Heritage and the Arts
DIPNR	Department of Planning, Infrastructure and Natural Resources
DNR	Department of Natural Resources
DWE	NSW Department of Water and Energy (currently NOW)
Entitlement	ML of entitlement under the Water Act 1912 or unit shares under the *Water Management Act 2000*

Extractions	The taking of water from regulated rivers, unregulated rivers or groundwater sources for the purposes of irrigation, town water supply, use as an input for power stations, supplying stock and domestic users or any other use
GL	Gigalitre
Government share	The share of NOW's revenue requirement that is recovered from treasury, determined according to the impactor pays principle.
HSI-M	High Security Irrigators - Murrumbidgee
Hunter Water	Hunter Water Corporation
ICDs	Irrigation Corporations and Districts
IPART	Independent Regulatory and Pricing Tribunal of NSW
IPART Act	*Independent Pricing and Regulatory Tribunal Act 1992*
IQQM	Integrated Quantity and Quality Model
LRA	Long run average
LTAAEL	Long term average annual extraction limit – this is the target for total extractions (under all water access licences plus an estimate of basic landholder rights) which is used to assess whether growth-in-use has occurred. In any one water year, extractions can exceed the LTAAEL.
MDBA	Murray Darling Basin Authority
ML	Megalitre
MSO	Monopoly Service Order
Notional Revenue Requirement	IPART's determination of the revenue required by an agency to cover its efficient costs of providing its regulated services
NOW	NSW Office of Water
NPV	Net present value
NRC	Natural Resources Commission
NSWIC	New South Wales Irrigators' Council
NWC	National Water Commission
NWI	National Water Initiative
PwC	This refers to PricewaterhouseCoopers International Limited and Halcrow Pacific Pty Ltd
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*
SCA	The Sydney Catchment Authority
SLA	Subordinate Legislation Act
Tribunal	Independent Pricing and Regulatory Tribunal of NSW
Target Revenue	The revenue that IPART expects an agency to recover through prices
upcoming determination period	The period commencing 1 July 2011 and extending to 30 June 2014.
usage	Water extracted by entitlement holders
users	Entitlement holders

user share	The share of NOW's revenue requirement that is recovered from users through prices, determined on an impactor pays basis
WACC	Weighted Average Cost of Capital
WAL	Water Access Licence
Water source	This refers to whether water is extracted from regulated rivers, unregulated rivers or groundwater.
Water type	This refers to regulated rivers, unregulated rivers or groundwater
WAMC	Water Administration Ministerial Corporation
WMA	Water Management Act 2000
WRM	Water resource management
WSP	Water Sharing Plan