IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Review of prices for the Water Administation Ministerial Corporation

For the NSW Office of Water - from 1 July 2011

Water — Final Report
February 2011

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 — Final Report
February 2011

ISBN 978-1-921628-85-6 Det 10-4

The Tribunal members for this review are:

Mr Rod Sims, Chairman

Mr James Cox, Chief Executive Officer and Full Time Member

Ms Sibylle Krieger, Part Time Member

Inquiries regarding this document should be directed to a staff member:

Amanda Chadwick (02) 9290 8453

Scott Chapman (02) 9290 8449

Independent Pricing and Regulatory Tribunal of New South Wales
PO Box Q290, QVB Post Office NSW 1230
Level 8, 1 Market Street, Sydney NSW 2000

T (02) 9290 8400 F (02) 9290 2061

www.ipart.nsw.gov.au

Contents

1 Executive summary

1.1 Introduction

The Independent Pricing and Regulatory Tribunal of NSW (IPART) has set 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] These are the prices for:

- holding entitlements for water and extracting water from regulated rivers, unregulated rivers and groundwater sources (water management prices)
- issuing Water Access Licences (WALs), 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).

The prices paid by most water users will increase to fund the users' fair share of increased activity and costs to be undertaken by NOW that are necessary to ensure a reliable system of water allocation and the enforcement of property rights.

The new prices will take effect on 1 July 2011 and continue until 30 June 2014. This Final Report (Report) sets out and explains IPART's determination of these prices (Determination), including the decisions that underpin the Determination and how it affects water users, NOW, the NSW Government and the environment.

Our final decisions are consistent with those of the Draft Determination released for consultation in October 2010. Since the release of the Draft Determination:

- we have allowed a small increase in the weighted average cost of capital (WACC) due to changes in market conditions (although this has not resulted in any increases in prices or the target revenue to be paid by users)
- we have increased the charge for reading user owned meters from $131 to $192 and the level of refundable deposit to be lodged in the event of a dispute about meter accuracy, in response to further information from NOW
- we have made small modifications to the reporting framework for the Determination in response to comments from NOW and stakeholders.

---

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

Unless otherwise stated, the figures in the Report are in $2009/10. The accompanying Determination are in $2010/11. Costs and prices in the 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 Determination will not commence until 2011/12.[2]

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

1.2 What is happening?

New water management charges

IPART's Determination will result in increases in water management prices for most valleys in NSW. We acknowledge that, in percentage terms, these increases will be significant for most users. However, we consider that, through these prices, water users will be paying for their fair share of NOW's efficient costs of its monopoly services. We have determined these efficient costs after careful consideration and independent review, and believe that users will ultimately benefit from NOW's monopoly services as they are aimed at maintaining and protecting the water property rights system.

Excluding meter service and user charges, IPART's analysis indicates 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
- 84% of licences will face a bill increase of less than $100 a year by 2014.

---

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 the review, which delayed the commencement of the Determination. In the absence of a new determination, IPART's 2006 Determination provided that 2009/10 prices should continue over 2010/11.

3 When a water sharing plan (WSP) commences, licences issued under the *Water Act 1912 (WA)* are immediately replaced with water access licences (WALs) issued under the *Water Management Act 2000 (WMA)*. As water sharing plans have not yet commenced in all areas, some water access 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 did NOW in the entitlement volume data it has provided us). Further, as explained in Chapter 9, we have decided not to include conversion factors in this Determination.

IPART has decided 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 2 regions comprising 'inland' valleys and 'coastal' valleys). IPART has decided 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. Users with a meter, as defined in the Determination, who are currently being charged a 1-part tariff should advise NOW in writing to ensure that they are billed correctly from 1 July 2011. Charges have also been set for special category licences.[4]

As such, IPART's Determination includes water management 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 2011 Determination period. 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 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 in its submissions to IPART.[5]

4 Specific prices have been set for some special category licences including: floodplain 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 prices see chapters 6 and 9.

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

Valley	Bill per ML of entitlement year ending June				Increase 2010 to 2014					
					IPART		NOW proposed		Differences 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%**

[a] Users with meters on regulated rivers are subject to State Water metering charges and do not pay WAMC meter service and reading charges.

Note: Differences may not add due to rounding.

Source: IPART analysis.

Table 1.2 Unregulated Rivers– Forecast user bill per ML of entitlement excluding relevant meter service and reading charges ($2009/10)

Valley	Bill per ML of entitlement year ending June				Increase 2010 to 2014					
					IPART		NOW proposed		Differences 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 excluding relevant meter service and reading charges ($2009/10)

Valley	Bill per ML of entitlement year ending June				Increase 2010 to 2014					
					IPART		NOW proposed		Differences 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 Determination, this 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 (see section 1.3.4). However, rather than gradually increasing the minimum bill by 20% per annum over the 2011 Determination period, we decided to immediately increase this charge by approximately 60%.[6] We considered this to be 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 considered that a $35 increase (rather than a gradual annual increase of 20% or approximately $15 per annum) would provide a stronger incentive for licence holders to consolidate their licences, where possible.

While we recognise that some stakeholders have argued for even greater increases in the minimum bill, we were conscious that small users were under-represented in this review.

New transaction charges and new meter service and reading charges

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

New meter service and reading charges have been introduced to recover the efficient costs NOW is expected to incur in maintaining government-installed meters. This includes dealing with disputes related to meter accuracy and validating relocated meters. For user owned meters and approved meter equivalents we have introduced charges to recover NOW's efficient costs of reading these meters.[7] These charges range from $213 to $679 per meter for the servicing of different types of government-installed meters and $192 per meter for the reading of user-owned meters and approved meter equivalents for billing purposes. This is higher than the $131 charge proposed in the Draft Determination and reflects new information from NOW about its meter reading service level agreement with State Water. In setting these charges, we have ensured that meter reading and operating and maintenance costs are excluded from NOW's cost base (which is used to set water management prices), so 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 have been made necessary by the planned roll-out of several thousand Commonwealth Government funded meters across the Hawkesbury-Nepean River and the unregulated rivers and groundwater of the Murray-Darling Basin over the coming years. The charges are broadly in line with similar meter

6 20% per annum increases over 3 years equals about a 73% increase in total over the Determination 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.

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.

service charges that were established for regulated river users in our 2010 State Water Determination.

Since the Draft Determination, NOW has provided further information about the design of its metering program. This information has enabled us to undertake customer analysis of the meter service charges.[8] While these charges are cost-reflective, IPART is concerned by the results of our customer impact analysis, particularly for small water users in the Border, Gwydir, Namoi, Peel and Murrumbidgee valleys.[9] It shows, that despite NOW's earlier assurances that small users will not be subject to the meter service charge,[10] implementation of NOW's proposed metering program would mean that some users with entitlement as low as 10 ML for the Hawkesbury-Nepean River and 23 ML for unregulated and groundwater users of the Murray-Darling Basin will be subject to these charges. This would mean that up to 2% of NOW's unregulated river and groundwater users will pay both the minimum bill for water management charges and the meter service charge. As such these users would pay meter charges up to 7 times higher than their water management charge per annum unless NOW makes adjustments to the design of its metering program.

A key feature of NOW's proposed metering program is its internal goal of metering 95% of licensed entitlements.[11] Given the large numbers of unregulated river and groundwater users with small entitlements, it is unavoidable that this goal will result in the installation of a large number of meters and the imposition of meter service charges on small users. As there are significant costs implications for users, IPART urges NOW to urgently undertake cost-benefit analysis of its goal to meter 95% of licensed entitlement and to make changes to the design of its metering program as warranted. The purpose of this study is to ensure that the benefit of metering 95% of licensed extraction as opposed to an alternative lower level exceeds the costs. It is recommended that the cost-benefit study report is shared with users and with IPART before the next price determination.

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.

---

8 This analysis is included in Chapter 12.

9 Small users in the Hawkesbury-Nepean area will also be impacted at the conclusion of the waiver period.

10 NOW, Supplementary submission, May 2010.

11 NOW advised that the objective of metering 95% of licensed extraction was an internal policy goal and not a condition required of the program's funding body or legislation (23 December 2010).

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

Our decision is to allow a 41% increase by 2014 in NOW's total efficient costs associated with undertaking its monopoly water management activities.[12] 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 (WSPs) over the Determination period
- the requirement to remake and implement 31 existing water sharing plans over the Determination 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)
- 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.[13]

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

- 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. This included a reduction of 23.6% by 2014 in its proposed operating expenditure.[14]

---

12 The Monopoly Services are described in clause 3 of the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004* (Water Services Order). 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.

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

14 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 costs associated with the MDBA.

In addition, IPART decided to set the opening value of NOW's regulatory asset base (RAB) at zero.[15] 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. As a result, unlike the 2006 Determination, NOW will not earn depreciation on existing assets.

Table 1.4 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	70	202	335	NA
Total efficient costs	**50,339**	**66,773**	**67,531**	**70,886**	**41%**

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

Note: Totals may not add due to rounding.

Source: IPART analysis.

We are conscious that a number of stakeholders argued against IPART's draft decision to allow an increase in NOW's total efficient costs until there is evidence of improvements in NOW's outputs and performance. IPART's role is to set prices that reflect the efficient costs of NOW delivering forecast monopoly services. However, we agree with stakeholders that decisions to increase the allowed costs necessary to support increased activities must be matched by NOW's delivery of improved services and outputs. To that end, we have collated NOW's forecast monopoly service outputs, which underpinned analysis of its efficient costs, and have established a reporting framework against those outputs.[16]

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

16 See Appendix L.

1.3.2 Increases in the amount of notional 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 review 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.[17] 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 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 in 2009/10. This is smaller than the 41% total increase in NOW's efficient costs of undertaking its monopoly services. Table 1.5 shows IPART's decisions on the share of notional revenue to be recovered from users.

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 Determination, users would notionally pay 59% by the last year of the Determination period. This reduction largely reflects the impact of IPART's 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 *Water Act 2007 (Cth)* (Commonwealth Water Act) 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. This represents a significant reduction in the user share of additional Scenario 2 costs, relative to NOW's proposal.

---

17 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.

Table 1.5 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	39,378	40,843	41,843	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	-	-20,676	-21,308	-21,956	
% 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 will vary between 4% and 73% over the Determination period, except for some groundwater users currently subject to a fixed charge only, who will face bill increases greater than this in 2011/12.[18] However, some unregulated river and groundwater users will experience a decrease in bills per ML of entitlement of between 6% and 22% over this period. The considerable variation in impacts between the valleys is due to 4 factors: the new, and more robust, method we used to allocate costs between water sources and valleys; changes to the entitlement since 2006; changes to the usage forecasts used to set prices, relative to those used in making the 2006 Determination; and variations in the levels of historical cost recovery by valley. For example:

[18] 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 period.

- Increases in the North Coast valley regulated river charges are largely driven by an increase in the level of forecast cost recovery, which was estimated to be 11% by the end of the 2006 Determination period. Reductions in forecast usage volumes also increase usage prices.
- Increases in Peel River valley unregulated charges are driven by changes to the cost allocation methodology. However, an increase in entitlement and forecast usage volumes has placed some downward pressure on the level of price increase.
- Increases in Namoi valley groundwater charges are largely driven by reductions in entitlement volumes since 2006, which means that more cost must be recovered per ML of entitlement. An increase in forecast usage volumes has tempered the increase in usage charges

Explanations of the effect of these 4 factors for every valley and water source are included in Appendix O.

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[19] about where costs were incurred, as this was the best option available. For this review, NOW proposed a new approach, which involved 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.

Our 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, 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 future price reviews.

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.

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.

19 Then the Department of Natural Resources (DNR).

We adopted NOW's proposed entitlement volumes for all water sources and valleys, including those for the major water utilities, Hunter Water Corporation (HWC) and the Sydney Catchment Authority (SCA). 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 needed to make assumptions about the forecast metered water usage in each valley. For regulated rivers, we used the same usage forecasts as were used in making the 2010 State Water Determination. While we recognise that some stakeholders will not support this decision, no compelling case has been made for using different usage forecasts for what is essentially the same water resource. For unregulated rivers and groundwater, we used usage forecasts equal to 100% of the entitlement volume, given limitations in the information available from NOW.[20]

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. Those prices will not be capped in the first year, but will be capped in subsequent years.

The 20% cap on forecast annual bill increases is broadly consistent with the 20% cap applied in the 2006 Determination for 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 this 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 the cap mechanism.

[20] These limitations are discussed in Chapter 8.

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

The decision to mitigate price shocks means the 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). Consistent with the National Water Initiative, NOW is progressively moving towards full cost recovery. 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 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. Further, the Determination provides NOW with a high degree of revenue certainty as 80% of the user share of its notional revenue will be recovered via fixed charges.[21]

Table 1.6 NOW's forecast levels of cost recovery under the 2011 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	39,378	40,843	41,843	26%
IPART's target user share of costs (via prices)	29,099	33,944	36,925	39,189	35%
Forecast level of cost recovery under IPART's Determination	88%	86%	90%	94%	

Source: IPART's analysis.

To enable NOW to carry out its water management activities effectively, we believe it is appropriate that the NSW Government 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 the issues identified in this Report. Table 1.7 shows our assessment of NOW's requirements for Government funding for its monopoly water management activities.

21 This means that even if the Available Water Determination was set at zero for every water source and valley in NSW, NOW would still recover 80% of its user revenue.

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	61	101	NA
Total Government share of NOW's total efficient costs:	**17,260**	**27,395**	**26,688**	**29,042**	**68%**
Difference between notional user share and target user share	3,980	5,434	3,918	2,655	-33%
Total Government contribution to the cost of NOW's monopoly activities	**21,239**	**32,829**	**30,606**	**31,697**	**49%**

Note: Totals may not add due to rounding.

Source: IPART analysis.

1.3.6 How different is the 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 decisions on user shares. The key differences between NOW's proposal and IPART's prices include:

- IPART's decision that NOW's total efficient operating costs are 23.6% lower than NOW proposed[22]
- IPART's 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 decision to establish the RAB 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.

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

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

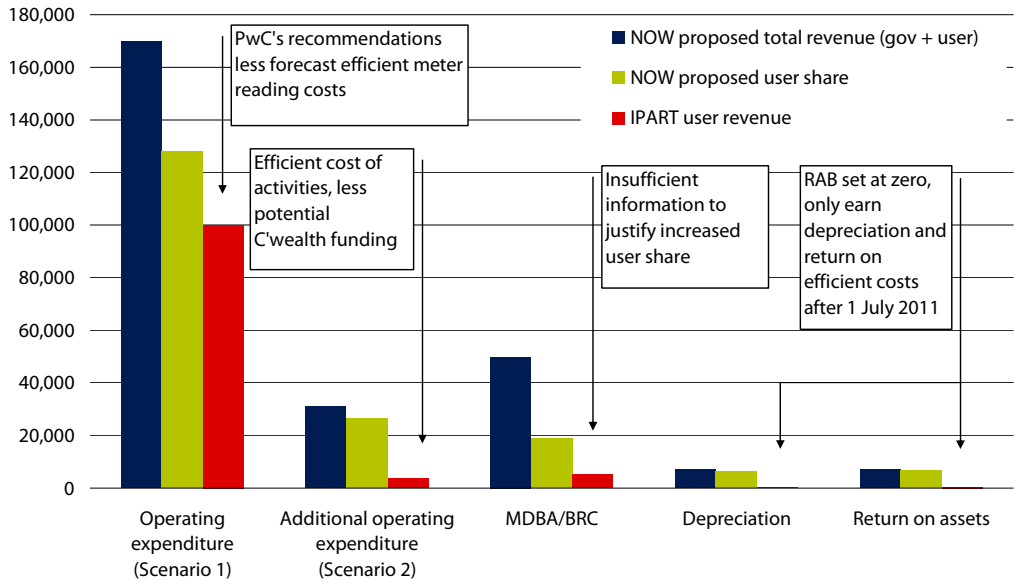


Table 1.8 lists the government and 'target' user shares of NOW's total efficient costs of undertaking its monopoly water management activities, under this Determination. This shows that, relative to the final year of the 2006 Determination period (2009/10), the user share of NOW's costs is increasing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

Table 1.8 Government and user contributions to NOW's costs, under the 2011 Determination ($'000s, $2009/10)

	2009/10	2011/12	2012/13	2013/14
Government share of NOW's total efficient costs	21,239	32,829	30,606	31,697
% 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	39,189
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 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 and actions to be completed before the next price review?

At the time of the 2006 Determination, we strongly expressed concerns about the (then) Department of Natural Resources' inadequate response to several long-standing deficiencies in its systems and performance. These deficiencies meant that the transparency, control and accountability of expenditure on water management activities were 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 about water management prices and in our recommendations for reporting and improvement opportunities over the 2011 Determination period. 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
- deficiencies in NOW's explanation of its cost forecasts were one factor considered in our decision to reduce NOW's proposed operating expenditure by 23.6% by 2014
- we did not allow increases in the user contributions to the MDBA as on the basis of information provided we were not confident that this was efficient or consistent with the 'impactor pays' principle
- delays in the price review following the provision of incomplete information from NOW, and the commencement of new prices on 1 July 2011, have also reduced the revenue that NOW would otherwise have collected from users

We have written to the Minister for Water about these issues, and made recommendations about how they might be resolved. We have also made a 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 about its expenditures and activities over that period, and to enhance review of NOW's proposal at the next price review. Further, we would expect that by the time NOW would have:

- delivered the forecast water resource activities that justified our allowance of costs and provided progress reports consistent with the reporting framework
- implemented strategies to address IPART's recommendations to the Minister for Water
- considered and published a policy on levying water management charges on stock and domestic and other basic rights holders

- undertaken cost-benefit analysis of its goal of metering 95% of licensed extraction making changes to the design of the program as necessary and shared that cost-benefit analysis with users and IPART
- developed a clear framework about how it will make decisions about which type and location, having due regard to the future level of efficient operating costs of this program.

1.4 Structure of this report

The rest of this Report explains IPART's decisions and findings for the 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 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).

IPART's review of these charges involved a number of steps. This was partly because identifying the water management services that these charges relate to was not straightforward. It was also partly because the costs relating 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 needed to be allocated to individual water users through water management prices. This involved 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:
  - identifying the specific water management services to be included in estimating the costs to be recovered through these charges
  - determining the full, efficient costs NOW is likely to incur in providing water management activities over the determination period
  - deciding on the appropriate share of these costs to be recovered from water users through water management charges
  - deciding on the price structure, then allocating the user share of costs across water sources and valleys
  - determining the entitlement volumes and usage forecasts to set water management 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 the Determination.

2.1 Decide on the length of the Determination period

Decision:

1 IPART's 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 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. 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 conclusion on this issue 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.[23]

At the public hearings held in July 2010, when 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.

[23] The Basin Guide was released on 8 October 2010. The Basin Plan is scheduled for release in 2011 http://www.mdba.gov.au/basin_plan/faqs/basin-plan , accessed 19 January 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 it needed to be included in its submission and the due date.
- In 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.
- In 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.
- In 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.
- In April 2010 we released PricewaterhouseCoopers and Halcrow Pacific's (PwC's) Draft Report on its review of NOW's proposed expenditure.
- In May 2010 we received an additional supplementary submission from NOW, which proposed meter service charges.
- In May 2010 we announced that we had re-started the review.
- In June 2010 stakeholder submissions were due.
- On 19, 22 and 23 July we held public hearings in Wagga Wagga, Tamworth and Sydney, respectively.
- In June 2010 we published PwC's Final Report on its review of NOW's proposed expenditure.
- In July 2010 we published an amendment to PwC's Final Report.
- In October we published the Draft Report, Draft Determination and an appendix to the PwC Report that NOW had previously asked not to be published until its funding negotiations were more advanced.
- In November 2010, stakeholder submissions were due. IPART received 27 submissions in response to the Draft Report.

On 4 February 2011, we published this Report and Final Determination.

- Continued to argue for a determination finish date of 30 June 2013 (rather than a year later, despite 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.

NOW did not comment on this issue in its response to our Draft Determination.

2.1.2 Stakeholder views on determination length and start date

In response to the Issues Paper, 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 Ltd submitted that as they had already set their 2010/11 budgets and associated charging schedules, a start date that necessitated a revision of these figures would create additional work, and would result in less certainty for water users and potential non-compliance with Water Act rules.[24] 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.[25]
- A 1 July 2011 start date would signal to NOW that it is unacceptable to delay a review process by providing inadequate information for stakeholder comment (Western Murray Irrigation Ltd).
- NOW's argument for a shorter determination period, on the grounds that it faces uncertainty until the Murray-Darling Basin Plan is in place, was not compelling. According to the NSW Irrigators' Council (NSWIC), NOW's Commonwealth driven or affected work largely relates to the implementation of known programs.[26]

In response to the Draft Determination, a number of stakeholders expressed support for IPART's decision to start the determination period at 1 July 2011 and to end the period at 30 June 2014.[27]

---

24 Murray Irrigation submission, June 2010; and Western Murray Irrigation Ltd submission, June 2010.

25 Tamworth Regional Council presentation at the Tamworth public hearing, 22 July 2010.

26 NSW Irrigators' Council submission, June 2010.

27 For example, the Richmond and Wilson Combined Water Users, Lachlan Valley Water and Gwydir Valley Irrigators Association.

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 (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 in 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 the Determination will conclude at the same time as the 2010 State Water Determination. In the course of the public hearings 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 (NSWIC).[28] Where it is possible, we consider there is benefit in parallel reviews of prices for NOW and State Water, given the number of common issues and stakeholders.

We note that the NSWIC and a number of other stakeholders' submissions in response to the Draft Determination expressed support for this decision.

[28] 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 NOW 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, and 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.[29] By law, water management charges can only reflect 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 review was to decide which water management services could 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 review 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 method we used in other water determinations and in other industries. In applying the building block method, we made decisions about:

NOW's forecast efficient operating expenditure over the 2011 Determination period

- an appropriate allowance for a return on its RAB, and
- an appropriate allowance for a return of this asset base (regulatory depreciation).

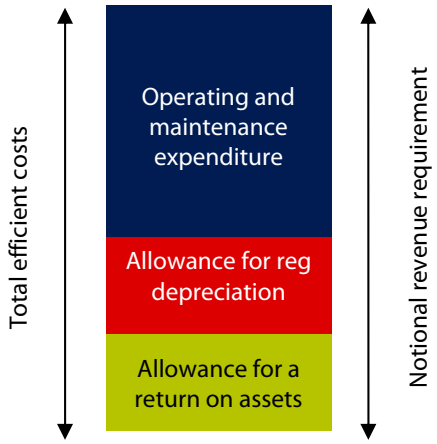
[29] NOW's monopoly service activities represent only a portion of its total activities. In its presentations to the public hearings in July 2010, NOW stated that, as at October 2009, its staff totalled 619 FTEs, of which 41% (256 FTEs) were working on monopoly service (ie, IPART regulated) activities.

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, in calculating the notional revenue requirement 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. 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 in NOW's forecast operating expenditure its forecast contributions (on behalf of the NSW Government), to the water management activities of the Murray-Darling Basin Authority (MDBA) and the Border Rivers Commission (BRC). 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 was to decide how much of NOW's total notional revenue requirement should be 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, as a result of work by independent consultants and 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 benefiting 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 meet 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 NWI Pricing Principles.[30]

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.[31] IPART is aware that NSW has fulfilled its COAG Water Reform 1994 and NWI commitments, whereas other jurisdictions are yet to implement independent price regulation for water resource management.[32] 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 understand 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 a '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 provide benefits to users through the implementation of a secure system of enforceable property rights, enhanced knowledge about resource availability, and systems for trading and monitoring. To enhance transparency, Appendix L includes descriptions of NOW's monopoly service outputs by 2014.

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

---

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

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

32 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 water management price structure for each water source in each valley, then set prices

Once we had determined the user share of NOW's efficient costs, we decided 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 about:

- The geographic split of prices. We considered whether to maintain the current valley-based prices for regulated and unregulated rivers, and whether to move to an 'inland'/'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 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 for the 2011 Determination period, 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 water management 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 water management 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 us to determine and apply forecast entitlement and extraction (or 'usage') volumes.

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

Extraction volumes are inherently uncertain. If extraction volumes are greater than forecast NOW will receive greater than expected target revenue, and will recover more than the user share of its costs through charges. On the other hand, if metered extraction volumes are less than forecast NOW will receive less revenue than expected, and will recover less than the user share of its costs. As discussed in Chapter 4, 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, resolving disputes over meter accuracy and validating relocated meters of government-installed meters and reading user-owned meters and meter equivalents. 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 for the Hawkesbury-Nepean and Murray-Darling Basin unregulated and groundwater, 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 via an alternative mechanism such as including the costs within the general operating expenditure base, whereby they would be recovered from all users via water management prices
- considered whether to establish new meter service charges in this determination given final funding approval of the metering program has not been given. We also considered whether the option of gradually increasing the new charges towards full cost recovery was necessary or efficient
- 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
- reviewed stakeholder comments and the results of customer impact analysis undertaken since the release of the Draft Determination.

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. 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 with 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 water management pricing decisions, we focused both on potential impacts on water users and on NOW's forecast level of cost recovery.

In assessing the potential impact of water management prices on 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 management prices through trading entitlements.

In the Draft Report, IPART requested further information about NOW's metering program as insufficient information had been provided to make assessments about customer impacts. More information has been provided and our analysis of the impact of metering service charges for small users is contained in Chapter 12. As discussed in Chapter 13, IPART is concerned by the customer impacts of the goal to meter 95% of licensed entitlement. IPART urges NOW to urgently undertake cost-benefit analysis of this goal and to make changes to the design of its metering program as warranted. It is recommended that the cost-benefit study is shared with users and with IPART before the next price determination.

In relation to potential impacts on NOW, we note that under this Determination NOW's forecast revenue from water management 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 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 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 users 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 to ensure that NSW's water resources are managed to give all users, and the environment, access to an appropriate share of sustainable water supplies over the long term.

However, not all of NOW's water management activities can be considered in setting its water management charges: only those that are 'government monopoly services', as defined in the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004* (Water Services Order) can be taken into account. 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.[33] This made it difficult for both IPART and stakeholders to assess NOW's pricing proposal. As explained in Chapter 13, IPART has written to the Minister for Water and NOW recommending the ring-fencing of NOW's monopoly service expenditure from its other activities. In its response NOW has undertaken to implement a framework to do this over the determination period.[34]

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

- Asked our consultants, PwC, to examine NOW's assessment of its monopoly services and the costs associated with providing those services. We then considered NOW's information and PwC's findings and recommendations, and made a decision about 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.

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

34 NOW, Response to IPART's Draft Determination, 29 November 2010, p 15.

- 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 contained in Appendix L). This schedule will provide a 'baseline' from which water users, IPART and the Government can assess NOW's performance over the 2011 Determination period.

The section below provides an overview of our decision on which of NOW's activities should be included in this Determination. Subsequent sections discuss NOW's broad water management responsibilities and activities, relevant considerations in deciding which activities to include in setting prices, and our observations 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 decision about which NOW activities to include in setting prices

Decision

2 IPART's decision is to accept PwC's recommendations on the NOW activities that are monopoly water management services and 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, PwC recommended that 50% of NOWs 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, raising 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 the 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 Determination. For instance, NOW has reported that, as at October 2009, its staff totalled 619 FTEs, of which 256 (or 41%) were working on monopoly water management activities.[35] 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, and 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
- monitoring the quantity, quality, and health of aquatic ecosystems and water extractions.[36]

NOW groups the activities it undertakes to fulfil 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
- provision of legal advice on water matters to the Government.[37]

As PwC's review has shown, only some of NOW's activities are 'government monopoly services'.

---

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

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

37 PricewaterhouseCoopers/Halcrow Pacific, *Final Report, Review of the NSW Office of Water's water management expenditures*, 30 June 2010, p 65.

We are sensitive to the fact that given the somewhat intangible nature of a number of these activities some stakeholders are concerned that these services may not be being undertaken by NOW or not being undertaken in their valley. For example, Mr Patmore's submission suggests that natural management activities being undertaken on the Barrington River – a tributary of the Manning River in the Hunter valley unregulated river area – are in fact being provided by organisations other than NOW.

Taking this example, IPART sought further information from NOW about the monopoly services it undertakes in relation to the Barrington River and the Manning Valley. NOW provided the following examples of how it oversights water management "in order to ensure that users and the environment have fair and equitable access to water.

- NOW operates 18 surface water gauging stations in the Manning Valley for resource assessment, flood warning and water management purposes. 3 of these are in the Barrington catchment, although all stations in the valley provide data necessary for water management across the valley. 11 of the 18 stations are funded by NOW, the other 7 by MidCoast Water, Macquarie Generation and Gloucester Shire Council. NOW's water management charges only include those funded by NOW. However information from all the 18 gauging stations is collated by NOW and is made available as real time information on NOW's Water Information website for the information of water users and other stakeholders.
- In August 2009 NOW commenced the water sharing plan for the Lower North Coast Unregulated and Alluvial Water Sources. The Barrington River is covered by this water sharing plan. This plan was developed over a number of years in consultation with the community. The plan sets rules for licence holders' access to water and for water trading and provisions to meet environmental needs in the rivers. The plan, a guide to the plan, background document and summary sheets for the specific rules applying to each of the 21 water sources in the plan area are on NOW's website. Mr Patmore along with all other licence holders would have been advised of the new conditions associated with the water sharing plan.
- As part of the implementation of a water sharing plan, all previous Water Act licences are verified and converted to Water Access Licences and separate works approvals and registered on the Water Access Licence Register. The licences can then be traded separately to the land in accordance with the rules in the WSP. NOW does not charge a separate fee for service for these licence conversions.
- NOW is responsible for ensuring that water is extracted and water supply works and activities are constructed and undertaken in accordance with licence and approval conditions. NOW has undertaken a number of inspections in the Manning Valley and undertaken compliance action to ensure that other water users and the environment in the valley are not adversely impacted by unauthorised activities.[38]

[38] Email received from NOW, 25 January 2011.

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

Under the *Independent Pricing and Regulatory Tribunal Act 1992 (IPART Act)*, we are only empowered to determine prices for 'government monopoly services'. 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 'government monopoly services'.

In interpreting this clause for this (and past) determinations, we have 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.[39]

We then considered the activities NOW included (and excluded) in making its pricing proposal, and PwC's assessment of whether those activities were consistent with the definition of 'government monopoly services'.

3.3.1 The activities NOW included (and 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.[40]

---

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

40 NOW, 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
- intergovernmental activities
- Country Towns Water Supply and Sewerage Program
- Cap and Pipe the Bores Program
- part of the groundwater drilling unit, which is operated on a commercial basis.

In its Draft Report, IPART suggested that the implicit assumption underpinning NOW's methodology was that all of its remaining activities are consistent with the definition of 'government monopoly services'.

In response to the Draft Report, NOW argued that its submission contained a detailed description of each activity to be funded and that interpretation of the Water Services Order was necessarily a matter of judgement. NOW also undertook to further consider the issue and to develop a framework for the more transparent identification of its monopoly services and expenditures. As identified in Chapter 13, we have provided further advice to NOW about our expectations of a ring-fencing framework.

3.3.2 PwC's assessment of whether these activities are consistent with the definition of 'government 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 NOW had calculated the costs associated with the activities it excluded from the regulatory cost base, and the sum of those 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 were inadequate. This made it difficult for PwC to determine whether NOW had made an appropriate and correct selection of activities for inclusion (and exclusion) in its regulated costs.

Despite this, and on the available information, PwC found that most of the activities NOW included in its 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. PwC considered that, while some of the activities undertaken by the 7 FTEs included by NOW 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 those 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'	

NOW activities	Assessment against the Monopoly Services Order and other guidance	Comments
	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.
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 conclusions 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 next price review.

It appears 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.[41] 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 this Determination and its submission to the 2014 price review.

Finding

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

Following the publication of the Draft Report, IPART wrote to the Minister for Water and NOW about this finding. As set out in Chapter 13, in its response to the Draft Report NOW has undertaken to develop and publish a clear criteria for the identification of monopoly services over the next determination period and IPART has provided NOW with further advice about its expectations at ring-fencing.[42]

41 This was disputed by NOW in its submission to the Draft Report.
42 NOW, Response to IPART's Draft Determination, 29 November 2010, p 15.

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

Given the limited independent oversight of NOW's performance[43] 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.

The efficient costs associated with activities and outputs listed in the Monopoly Service Outputs Schedule have been 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 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

[43] 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.

  - 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
- ensuring that 100% of reported compliance breaches are actioned.

In the course of this price 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.[44] In addition, in its response to the Draft Determination the Cooma-Monaro Shire Council expressed concerns that the Return Flow Credit Policy had not been completed. In response to the criticism of its performance over the 2006 Determination period, NOW has provided detailed information about its deliverables since 2006. This information is included as Appendix J.

In relation to the delivery of water sharing plans, NOW has given 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.[45]

We acknowledge that NOW's actual 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

---

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

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

achievement of operational efficiencies relative to the Department's cost proposal to the 2006 price review.

For this 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 at Appendix L) 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.[46]

We note that following its response to the Draft Determination, NOW provided a proposed new Appendix L that suggests removal or reduction of some outputs. NOW explained that the proposed revisions were:

> …what we realistically believe at this stage we can achieve with the funding, but we will agree to strive for the targets IPART has set in Schedule L. A lot depends on circumstances e.g. current floods, and also the extent and effect of any structural changes due to political outcomes.[47]

IPART has not accepted these amendments and has retained the original Appendix as was included in the Draft Report. We note that the Appendix is a list of the activities that NOW identified as needed and which underpin NOW's, PwC and our decisions to increase allowed expenditure. As such, users would reasonably expect that if they, and the Government, provide the revenue to meet efficient levels of expenditure then NOW will deliver the promised outputs or 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 result in other unplanned outputs being delivered.

As Chapter 13 explains, IPART expects that NOW will report progress against key elements of the Monopoly Service Outputs Schedule annually and against the whole Schedule in its submission to the next price review. IPART will publish NOW's annual reports. In addition, IPART will publish its assessment of NOW's performance in an annual report on all IPART-regulated water agencies.

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

---

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

47 Email received from NOW, 12 January 2010.

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 discussed in Chapter 2, 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:

- we calculated 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 the 2011 Determination 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 decision on NOW's notional revenue requirement – ie, its total efficient costs of delivering its monopoly water management services. Subsequent sections discuss each of the findings that underpin this decision.

With the exception of a very slight increase to the allowance for return on assets, which reflects an increase in the Weighted Average Cost of Capital (WACC) from 7.0% to 7.1%, our decisions on NOW's costs are the same as the Draft Determination.

4.1 Summary of decision on NOW's notional revenue requirement

Decision

4 IPART's 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 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	70	202	335
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]	**66,773**	**67,531**	**70,886**

a Totals may not add due to rounding.

In addition to the findings shown in the table, this 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 2011 Determination period
- an appropriate rate of return for NOW over the 2011 Determination period is 7.1% 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 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 the forecast expenditure is efficient, and stakeholder comments on the 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.[48]

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).

48 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 2009.

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)[49]
- the operation and maintenance of its upgraded surface water databases[50]
- 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

49 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.

50 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.[51]

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 licence all extractors within irrigation corporations, private irrigation districts and trusts"[52] (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).

51 NOW submission, December 2009, pp 39–42.
52 NOW submission, December 2009, 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 submission, December 2009, p 52, and NOW's Excel Information Returns to IPART, 24 December 2009.

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
- 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, 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.[53]

[53] 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).
- 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.[54]

Table 4.5 lists PwC's recommended levels of efficient operating expenditure for NOW over the 2011 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).
- 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).

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

- 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.[55] Rather, PwC was concerned with whether the activity complies with the definition of 'government monopoly services' under the Water Services Order, and whether NOW's proposed costs for each activity are efficient.

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.

[55] 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.

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/Halcrow, *Review of NSW Office of Water's Water Management Expenditure*, Final Report, Appendix on Scenario 2, June 2010, 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	1.0	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	1.0	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	1.0	Nil adjustment.
Structural adjustment	3.0	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	5.0	Nil adjustment

Additional activities	NOW proposed FTEs	PwC adjustment and rationale
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	2.0	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.
Systems for urban water consumption reporting	1.0	100% reduction, as not consistent with the definition of monopoly services.
Assessment of water purchase	2.0	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 PwC report. Stakeholder concerns primarily relate to:

- Doubts or questions about the efficiency of NOW's current costs and its performance over the 2006 Determination period – particularly given its failure to complete the number of Water Sharing Plans envisaged at the 2006 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) had 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 opposed 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.[56]

- 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 NOW's response to IPART's Draft Determination

IPART and PwC findings on NOW's efficient level of operating expenditure

In response to our Draft Determination and Report, which largely accepted PwC's recommended efficient level of operating expenditure, NOW submitted a number of arguments to counter some of PwC's concerns and findings. According to NOW:

[56] Gwydir Valley Irrigators Association submission, June 2010, p 26.

- PwC recognised NOW's additional workload due to the increasing complexity of water management, yet PwC's findings do not allow for additional resourcing.
- NOW continually assesses its staff allocations to take account of work priorities.
- Virtually all of NOW's water management activities are mandatory, and therefore risk-based analysis is not generally considered appropriate.
- The efficiency adjustment of 0.5% per annum does not take into account the efficiency savings already incorporated into NOW's forecasts, including: a reduction in the overhead rate of 4% per annum in 2010/11 and 2011/12, a reduction of 20% in baseline remuneration costs, a reduction of 20% in the additional FTEs, and productivity improvements already incorporated into forecasts, such as in the area of water monitoring
- While efficiencies are possible in areas such as water monitoring, which can be assisted by technology improvements, it is difficult to assess the efficiency of, or impose efficiencies on, broader water planning, assessment and policy work.
- NOW has internal strategic business plans and risk assessments, which guide its compliance activities.
- Over the last 4 years NOW has had 5, rather than 20 to 25, FTEs working on operational planning instruments and these FTEs have completed a number of operational planning milestones and made significant progress on completing a range of rules and guidelines (which are listed in NOW's submission to the Draft Determination and Report).

NOW also reiterates its argument against the exclusion of 18.3 FTEs from its cost base, whose time is 'unallocated' to any specific water management activity, on the basis that there are sound reasons for not allocating this staff time to specific cost codes.

Stakeholder concerns about double-counting of NOW's costs with those of other agencies

In response to stakeholder concern, NOW's submission states that its forecast expenditure does not include or double count water management expenditure undertaken by the Sydney Catchment Authority (SCA) and State Water. NOW notes the following:

- There is no double counting between Sydney Catchment Authority's (SCA) corporate licensing charges and funding of works and NOW's IPART regulated charges:
  - Corporate licence fees recover NOW's cost of administering SCA's water management licence, whereas water management charges recover a share of the assessed cost of managing the resource for the valley as a whole.

- In terms of gauging stations, the SCA collects data from its own gauging stations, however NOW still incurs costs to verify the data supplied by the SCA from these stations. NOW also operates its own gauging stations within the South Coast region, outside SCA boundaries. Costs for these stations would be incurred regardless of whether water monitoring activities were undertaken the by SCA.

- There is no double counting between the cost of hydrometric stations on regulated rivers, which is funded through State Water's charges, and the cost of hydrometric stations that are included in NOW's proposal. According to NOW:
  - Only the costs associated with Office funded stations are included in water management prices – stations funded by State Water and other external sources are excluded.[57]
- There is no doubling counting between the cost of State Water compliance staff, which is funded through State Water charges, and the cost of additional compliance staff for NOW, which is included in NOW's proposal. According to NOW:
  - State Water has only one dedicated compliance staff member. While State Water staff may alert the Office to any breaches in water licence conditions, they do not have the same powers to investigate and prosecute illegal water activities as those of the Office of Water staff.[58]

4.2.5 Stakeholder responses to IPART Draft Determination

Some stakeholders were critical of price increases allowed under IPART's Draft Determination, given the lack of information provided by NOW to support its cost and pricing proposal. For instance, Richmond and Wilson Combined Water Users Association believes that insufficient information has been provided on groundwater to justify the increase in groundwater charges. Similarly, both Mr Newman Patmore (individual) and Bega Cheese argued that the prices in the Draft Determination are unjustified and unreasonable, particularly given the lack of information NOW has provided in relation to its forecast costs and water management activities.

Several stakeholders, including Murrumbidgee Irrigation, Gwydir Valley Irrigators Association and Lachlan Valley Water, also reiterated their view that no 'Scenario 2' costs should be included in NOW's cost base for the purposes of setting prices, due to the 'no net cost' provision in the Intergovernmental Agreement between the States and the Commonwealth.

Hunter Valley Water Users Association states that NOW's costs of examining major developments such as coal mines and other urban and industrial development should not be passed onto irrigators.

57 NOW submission, November 2010, p 16.
58 Ibid.

State Water questioned the ongoing efficiency adjustment applied to NOW of 0.5% per annum, given that this is less than those recently applied to State Water, and given concerns over the quality of NOW's information and its performance.

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

After carefully considering NOW's submissions, 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, and is the same as the Draft Determination. 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.

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.[59]
- 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

[59] 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).

- 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 under the National Framework for Water Compliance and Enforcement, the Commonwealth has agreed to fund additional compliance activities in the States.[60] As outlined above, additional compliance activity is one of the drivers behind NOW's forecast increase in operating expenditure. However, since the release of our Draft Report, NOW has provided us with assurance that its forecast compliance costs are over and above any forthcoming Commonwealth funding of further compliance activities in NSW, and that there is therefore no 'double count' between NOW's proposed and any future Commonwealth funded compliance costs.[61]

We consider that our findings on NOW's efficient level of operating expenditure achieve an appropriate balance between providing NOW with additional resources to deliver its water management and planning services in an environment of increasing complexity and sophistication, while also recognising PwC and stakeholder concerns with NOW's cost forecasts.

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. 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 explained in Chapter 3, we have consolidated NOW's promised service deliverables into a schedule and made a decision to require NOW to report against it.

60 See December 2009 COAG Communique, available at: http://www.coag.gov.au/coag_meeting_outcomes/2009-12-07/index.cfm#water_reform

61 Correspondence received from David Harriss (NOW), 14 December 2010.

Table 4.8 IPART's 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 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.

Responding to NOW's submission to the Draft Determination and Report

In response to NOW's arguments in its submission to the Draft Determination, we note that our findings recognise that water management is becoming more complex, and that our decision provides for additional resources for NOW. Relative to PwC's assessment of NOW's efficient operating expenditure in 2009/10, we have allowed for an increase of approximately 17% by 2013/14. Compared to NOW's actual operating expenditure in 2009/10, we have allowed for an increase of about 9% by 2013/14. However, as noted above, there is also an expectation that NOW should be able to realise efficiency gains, and therefore do more with a given level of resources.

In terms of specific concerns or arguments raised by NOW in its submission to the Draft Report, our responses are as follows:

- The efficiency adjustment of 0.5% per annum already takes into account the factors listed in NOW's submission.
- NOW states that PwC's view that 20 to 25 FTEs have been working on 'operational planning' over the last 4 years is incorrect, and that within activity C07-01 there were approximately 38 FTEs working on the development of water sharing plans, 5 FTEs devoted to legislative reform tasks and just 5 FTEs working on the development of operational planning instruments. However, we note that, in forming its view, PwC examined resources engaged in both 'operational planning' (C07-02) and 'water sharing plan development' (C07-01) as part of its 'detailed analysis of selected activities'.
- NOW states that it has internal strategic business plans and risk assessments which guide its compliance activities. However, PwC's finding that "there has been no evidence of a clear and transparent framework for guiding compliance activities over the past 4 years" was based on information provided by NOW.

- While there may be an argument for not allocating some staff time to specific cost codes, PwC removed 18.3 FTEs whose time is unallocated to specific cost codes from NOW's cost base. This was because PwC could not verify that the resources were being used efficiently and, primarily, to act as a proxy for concerns it had about the efficiency of NOW's existing deployment and allocation of staff.

In summary, NOW's arguments in response to the Draft Determination do not provide any substantial new information relative to that previously provided to PwC or IPART. We note that PwC's recommendations were based on analysis of information provided by NOW, and that PwC found that, in some cases, the information provided by NOW was not clear or convincing, or that questions were left unanswered. We also note that the onus is on NOW to provide IPART and its consultant with adequate explanation of, and justification for, its cost proposal. PwC's overall findings on the information provided by NOW can be summed up as follows:

> …a number of observations remain as unanswered questions because we are unconvinced about the responses received from NOW. The very fact that a range of 'loose ends' remain unanswered provides support for our conclusion that a portion of NOW's forecast costs are not robust. NOW has cooperated in providing information for the review and has made a genuine effort to substantiate its costs. PwC's recommendation to accept some of NOW's requests for additional resources reflects the fact that an adequate case has been made in some instances for some activities. However, our overall impression is that NOW is not exercising a satisfactory level of business planning, performance monitoring or 'stress testing', with the shortfalls being more severe in some areas of its business than others.[62]

Responding to stakeholder submission to the Draft Determination and Report

While we have found that NOW's efficient level of operating expenditure is lower than it proposed, we consider that NOW has made a case for increases to its operating expenditure in light of the increasing demands being placed on it as the water resource manager. NOW argued, and both PwC and IPART accepted, that water management is necessarily becoming more complex and sophisticated, and that this requires additional resources. We also note that NOW's water management activities will ultimately benefit water entitlement holders through maintenance and protection of the water property rights system.

[62] PwC response to stakeholder comments – explanation letter, 30 June 2010, p 2 (available at: www.ipart.nsw.gov.au).

PwC summed up its task, as well as the challenge faced by NOW, as follows:

> …PwC had the task of weighing up the demands to deliver water management and planning services in an environment of increasing complexity and sophistication against the demonstrable evidence of NOW's capability to deliver services in an efficient and effective manner
>
> We suggest that some of the concerns raised by stakeholders about poor performance of NOW may actually stem from difficulties in articulating, measuring and reporting performance of water management activities, than with the service levels *per se*.[63]

In response to specific concerns raised by stakeholders in submissions to the Draft Determination and Report, we note the following:

- The 'Scenario 2' costs that we have included in NOW's cost base (which equate to about $1.8 million per annum) are for activities that we consider should have been originally classified as 'Scenario 1' – ie, they will not be funded by the Commonwealth and they are consistent with best practice water management and the definition of monopoly water management services, regardless of Commonwealth water legislation and reform.
- We have accepted PwC's recommended efficiency adjustment of 0.5% per annum, even though this is less than the efficiency adjustment applied to State Water. This is because NOW has different functions to State Water, as well as a very different cost base and cost structure. We also note that this adjustment has been applied to NOW's cost base after we have already made other, significant reductions to its proposed costs. As PwC states:
  - We consider an ongoing efficiency parameter of 0.5% per annum is a reasonable benchmark for NOW. It reflects the different operating environment and business functions of NOW as compared to State Water, and acknowledges also the additional specific adjustments proposed in our review.[64]
- Hunter Valley Water Users Association argued that NOW's costs of examining major development such as coal mines and other urban and industrial development should not be passed onto irrigators. However, we note that for any entitlement holder – be it irrigator, mine or other organisation – NOW will be required to assess, monitor and manage water extractions. We also note that only the costs of activities consistent with the definition of monopoly water management services are included in NOW's cost base, and then only the share of these costs that are attributed to water users (in accord with the 'impactor pays' principle) will be recovered via prices.

63 Ibid, p 10.
64 Ibid, p 3.

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 method. 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).

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 deciding to establish a regulatory asset base (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.[65]

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

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

- 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).

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.[66]

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.

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.[67]

66 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.

67 Correspondence from NOW to IPART, 29 April 2010.

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.

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.[68]

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 Determination. In 2006, Halcrow Pacific found that the asset management systems of NOW (then the Department of Natural Resources) did not provide asset condition data. This 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.

In response to our Draft Report, NOW stated that:

> …The Office does not have a comprehensive asset management system at this stage by which to formally monitor asset condition or to program periodical maintenance or asset renewals…
>
> An asset management system would have some benefit in ensuring efficient maintenance and analysis of condition assessments and other data relevant to the management of monitoring bores and gauging stations. However, it should be noted that the wide dispersion of such relatively small long lived assets means assessment of asset condition may prove to be marginally cost effective on a risk management basis…
>
> The Office will assess the work involved in developing an asset management system for its assets and undertake a cost benefit analysis of implementing such a system. Development of an asset management system for the meters has been incorporated into the funding proposal to the Commonwealth for the expansion of the meter network.[69]

---

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

69 NOW submission to the Draft Determination and Report, November 2010, p 19.

4.3.4 IPART's 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'[70] and Halcrow's[71] 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.[72] PwC's recent findings confirm that NOW has yet to address these issues.

Therefore, as was the case for the Draft Determination, 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 note that NOW's submission in response to the Draft Determination requested that we reconsider our draft decision to set the opening value of its RAB at zero. However, NOW's submission did not commit to improving its asset management and capital planning systems. We strongly urge NOW to implement PwC's recommendations for improving the robustness of its asset management and capital planning. Robust asset management and capital planning systems are important for ensuring that capital expenditure is prudent and efficient. Hence, they are also important for demonstrating that capital expenditure should be incorporated into a RAB.

---

70 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.

71 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.

72 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."

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 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.[73]

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:

[73] NOW submission, December 2009, p 33.

- 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 or government departments, such as schools, hospitals or the police should, and that allowing NOW to earn a return on assets is akin to introducing a tax.[74]
- NOW doesn't operate using practices consistent with a commercial entity.[75]
- NOW's risk management strategy is not to spend on capital unless it has the funding, so there is no risk.[76]
- PwC's findings on NOW's capital asset management and planning practices suggest that NOW is not ready to adopt a RAB approach to pricing, so it shouldn't get a return on capital.[77]
- NOW needs to provide a justification for a return other than to demand the same as State Water.[78]

IPART's 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.

In making this decision IPART is cognisant that since 1994 State and Commonwealth Governments have agreed to implement full cost recovery for water activities to achieve a sustainable and efficient water sector and to improve the condition of water resources. That is, the Governments policy approach to water management is different from its approach to other government services such as public education and public hospitals, which are not provided on a full cost recovery basis. The policy to achieve full cost recovery for water activities was confirmed by COAG in 2004 in the National Water Initiative. More recently, in 2010, COAG agreed to the principles for the recovery of capital expenditure contained in the National Water Initiative Pricing Principles which include requirements related to the recovery of a return on capital.

---

74 For example, NSW Irrigators Council submission to IPART, June 2010; Bega Cheese submission to IPART, June 2010; the Local Government Shires Association submission to IPART, June 2010; Gwydir Valley Irrigators Association submission to IPART, November 2010; Hunter Valley Water Users Association submission to IPART, November 2010.

75 NSW Irrigators Council submission, June 2010; Bega Cheese submission, June 2010; Murrumbidgee Irrigation submission, December 2010.

76 Lachlan Valley Water submission, June 2010.

77 Murrumbidgee Irrigation submission, June 2010.

78 Ibid.

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 finding on this value, discussed in section 4.3.4 above – by a WACC of 7.1%. The basis for using a WACC of 7.1% 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 finding on allowance for return on assets ($'000, 2009/10)

	2011/12	2012/13	2013/14
Allowance for return on assets	70	202	335

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.

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 findings on allowance for regulatory depreciation

As discussed in section 4.3, our 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 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 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	Ranges from 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 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.[79]

[79] 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.

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[a]
- 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.[b]

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.

a The first Basin Plan is expected to commence in 2011.
b 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.[80]

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

80 NOW's submission, December 2009, p 46.

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 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 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.

After considering this request, we have made a 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 Determination, we estimate that approximately 80% of user share revenue is tied to NOW's fixed charges, compared to around 40% 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 intergovernmental 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 decision on the user share of NOW's total efficient costs (ie, the user share of NOW's total notional revenue requirement). This is the same as our Draft Determination. Subsequent sections discuss NOW's proposed user share of its costs, stakeholders' comments, and our analysis and conclusions.

Given our decision to cap prices so that forecast bills for most users do not increase by more than 20% per annum (see Chapter 6), the user share of NOW's total efficient costs, is greater than the revenue expected to be received from users (ie, the target revenue from users). In other words, to help mitigate the impact of prices on water users, we have set prices so that they are expected to recover less than 100% of the user share of NOW's total efficient costs. NOW's forecast levels of cost recovery over the Determination period are outlined in Chapter 12.

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

Decision

5 IPART's 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 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	39,378	40,843	41,843	122,064	59%
Total user share (%)	66%	59%	60%	59%	59%	

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

This 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.[81]

[81] The cost shares in Appendix C are as per NOW's Excel Returns to IPART, rather than its written submission. We found some errors/inconsistencies in the cost shares outlined in NOW's written submission relative to the Excel Returns that it provided.

For the 2011 Determination, NOW's proposal included 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
- the amalgamation or deletion of some past activities to better reflect the focus of its water management activities.

NOW argued that on an individual activity or cost code basis, its proposal did not change the user share of costs. It noted that, where it has merged 2 or more 2006 cost codes (2006 Determination), it has used the weighted-average of the user shares of these 2006 codes to calculate the user share for the new (2011 Determination) 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 roll 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. It indicates that user share of costs range from 37% for MDBA costs to 95% for NOW's return on assets. Under NOW's proposal, the overall user share of its costs rises from 66% in 2009/10 to 70% 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 of its costs ($'000, $2009/10)

	2009/10	2011/12	2012/13	2013/14	Total (2011/12-2013-14)	User share as % of total costs (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%	

Note: 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.[82]

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.

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

In response to IPART's Draft Determination and Report, several stakeholders argued that water users should not fund the costs associated with NOW's hydrometric network, including its gauging stations, as it provides little or no benefit to users and is primarily intended for flood and/or environmental management.[83] Under IPART's Draft Determination, costs associated with the hydrometric network are assigned to cost codes C01-01 ('Surface water quantity monitoring') and C01-06 ('Surface water monitoring assets management') and the user share of these costs is 70%.

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.

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. 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[84] 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).

83 These stakeholders include: Gwydir Valley Irrigators Association, Lachlan Valley Water, and the NSW Irrigators' Council.

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

5.4.3 User share of MDBA and BRC contributions

As noted in Chapter 4, 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, throughout the course of this review, including its submission to the Draft Determination, NOW has been unable to provide 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.

In relation to 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.[85]

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.[86]

---

85 NOW submission December 2009, p 46.

86 NOW supplementary submission, January 2010, pp 1-2.

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.[87]

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.

Our Draft Report stated that we would review the user share of MDBA costs if further information regarding the efficiency of MDBA expenditure and its consistency with the 'impactor pays' principle was provided. It also noted that, 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.

However, NOW's submission in response to our Draft Determination and Report did not address these matters.

We 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.

---

87 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.

5.4.4 User share of hydrometric network costs

As noted above, several stakeholders argue that water users should not have to fund the costs associated with NOW's hydrometric network, including its gauging stations. The Commonwealth is funding the capital costs of an expansion to NOW's hydrometric network. However, NOW will be responsible for the operating and maintenance costs of its expanded network and for meeting new national gauging standards – which will require it to increase its visits to each gauging station from 3 to 6 visits per year. Under NOW's proposal and IPART's Draft Determination, 70% NOW's costs associated with its hydrometric network are assigned to users.

While NOW's hydrometric network can be used to provide advance warning of floods, it is also used to assist in the development of water sharing plans and in monitoring compliance with licence and water sharing plan conditions. In reviewing NOW's costs for 'Surface water quantity monitoring' (cost code CO1-01), which includes the costs of monitoring gauging sites, PwC states:

> This activity is clearly core business for NOW as it has an obligation to maintain reliable information on the quantity of surface water resources for the purposes of providing advance warning of floods, providing announcements to regulated river licence holders about when they can pump and informing the operation of water sharing rules contained within WSPs.[88]

Similarly, NOW's submission states that the expansion and upgrade of its hydrometric network is occurring to:

> …improve flow and surface/groundwater connectivity monitoring and to meet the requirements of its water sharing plans and river operations.[89]

And to:

> …improve the accuracy of flow data and assist in improved allocation of water, ensuring that environmental assets are protected and improving compliance with licence and water sharing plans conditions.[90]

In the absence of water entitlement holders, we acknowledge that there would be some gauging stations in place to manage flood events. However, this would likely be a very small number relative to NOW's existing and future network of gauging stations – which is largely in place to manage the system of water entitlements.

Therefore, we consider that a 70% user share of these costs is appropriate and consistent with the 'impactor pays' principle. This acknowledges that 70% of the costs associated with the hydrometric network are due to the presence or impact of water entitlement holders, while 30% of these costs are incurred due to the broader community.

---

88 PwC/Halcrow, *Review of NSW Office of Water's water management expenditure*, 30 June 2010, p 80.
89 NOW submission December 2009, p 12.
90 Ibid.

5.4.5 IPART's assessment of the user share of NOW's efficient costs

Taking the above findings into account, our decision on the user share of NOW's total efficient costs and the user share of each cost component is shown in Table 5.4. Except for a slight increase in return on assets (to reflect an increase in the WACC from 7.0% to 7.1%), these figures are the same as in our Draft Determination. These figures are derived by applying the user shares listed in Appendix C to our findings on NOW's total efficient costs (presented in Chapter 4), while maintaining the 2009/10 level of user contributions to the MDBA.

Comparing the figures in Table 5.3 and Table 5.4, we can see that NOW proposed allocating about $186 million (or 70%) of its proposed costs to users over the 2011 Determination period, whereas our decision is to allocate approximately $122 million (or 59%) to users over this period.

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

Building block	2009/10	2011/12	2012/13	2013/14	Total (2011/12-2013/14)	User share as % of total costs
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	49	142	235	425	70%
Total user share	33,079	39,378	40,843	41,843	122,064	59%
Total user share (%)	66%	59%	60%	59%	59%	

Note: 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 water management 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 water management price path, including whether to place a cap on annual individual bill increases
- the minimum bill level for water management
- 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 management.

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

Our decisions on price structures are the same as those included in the Draft Determination. However, to address issues identified by NOW and the Gwydir Valley Irrigators' Association, we have amended both the Final Determination's definition of meters to include meter equivalents approved before 1 July 2011 and the description of the tariff applicable to supplementary groundwater entitlement holders. In addition, we have amended the definition of meter included in the Determination in response to comments received from NOW.

6.1 Summary of decisions on water management price structure

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

- maintain valley-based water management prices for regulated and unregulated rivers, and transition from valley-based prices to an 'inland'/'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 water management prices so that forecast bills do not increase by more than 20% per annum (assuming forecast levels of usage), with the exception of 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 2011 Determination
- increase the minimum bill from $60 per licence to $95 per licence for water management
- 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 (AWD) 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

Decision:

6 IPART's 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 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 regions: '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.[91]

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

In response to the Issues Paper and Draft Determination, 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'/'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, in response to the Issues Paper 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.

91 NOW submission December 2009, p 65.

Similarly, in response to the Issues Paper, 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. Further, the NSW Irrigators' Council argue that NOW's failure to hold appropriate information by valley should not be rewarded by IPART changing price structures.

At the Sydney public hearing, Lachlan Valley Water indicated that it would support groundwater pricing by water sharing plan area. In response to the Draft Report, State Water proposed that groundwater charges should be based on aquifers, rather than on a valley-by-valley or inland/coastal basis.

In contrast to the views outlined above, Tamworth Regional Council submitted that NOW's proposed move to 'inland' and 'coastal' groundwater prices was 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, the Member for Tamworth, 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, with a view to setting prices that reflect costs as much as possible, as well as and enhancing cost transparency and accountability.

In principle, we have accepted NOW's proposal to move from valley-based groundwater prices to an 'inland'/'coastal' division. 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'/'costal division'. This means that there will still be some variations in groundwater prices between valleys within these 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 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 aquifer	This is NOW's physical unit of management	The large number of coastal aquifers would make this pricing system complex and costly to administer NOW/IPART does not currently have data to calculate prices with reference to aquifers
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

Options	Arguments for	Arguments against
		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 Water sharing plans

6.3 Fixed charges and variable usage charges

Decisions:

7 IPART's 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 (as defined in the Determination)
- 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.[92] 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.

92 As advised by NOW, 23 December 2010.

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. 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.[93] 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 for unregulated river and groundwater users in the Murray-Darling Basin and the Hawkesbury-Nepean river systems (see Chapter 10).

In addition, NOW advised that all groundwater was managed and the characterisations of sources as either highly managed or unmanaged were no longer appropriate.

NOW has also provided information to IPART about users that were charged a 2-part tariff under the 2006 Determination where an approved meter equivalent has been approved.[94] NOW advises that various site constraints have necessitated approval by NOW or the Minister for Water of a 'meter equivalent'. These approved meter equivalents include electricity and diesel fuel readings and other proxies for metered water usage. NOW has recommended that IPART amend the Final Determination to enable users with a meter equivalent approved prior to 1 July 2011 to continue to be charged a 2-part tariff for the 2011 Determination.

---

93 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.

94 NOW advises that, due to site characteristics constraints, some users have been charged a 2-part tariff where a meter equivalent has been approved. Approved meter equivalents include diesel fuel readings and other proxies for metered water usage. Personal communication, NOW, 23 December 2010.

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).
- 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 response to the Draft Determination, NSWIC and other stakeholders expressed support for our decision to retain a 2-part tariff.

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.

In response to the Draft Determination, the Richmond and Wilson Combined Water Users argues that a 70:30 fixed/usage creates no incentive for irrigators on unregulated rivers to install meters.

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 original 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 (where trading is possible), rather than NOW's charges, signal the scarcity value or opportunity cost of water.
- 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 as defined in the Final Determination). 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 2010 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 cannot 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 Determination, we have assumed that unregulated river and groundwater users will extract 100% of their entitlement (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 based on judgement about the allocation of risk and the ability of the parties to manage this risk. We consider that a 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) if they chose and their water meter was approved by NOW. 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 Determination, we have removed the provision that allows users to elect to move from a 1-part to a 2-part tariff. Rather, the Determination provides that any user with a meter as defined in the Determination 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[95] while another has suggested that, despite advising NOW of the presence of the meter he was not charged a 2-part tariff.[96] Further, we note that the billing of some water users characterised by NOW as 'surveyed water users' was subject to up to 3-year delays over the 2006 Determination period and that the meters of these users were not read periodically by NOW or its billing agent.[97]

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 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.

---

95 Namoi Water submission, June 2010.

96 Mr N Patmore submission to Draft Report, July 2010.

97 Auditor General, *Auditor-General's Report Financial Audits, Volume Two 2008*, Special Review Former Department of Natural Resources, May 2008, p vii.

We note NOW's suggestion that the definition of meter included in the Determination be amended to include a 'meter equivalent' approved by NOW or the Minister for Water so that users charged a 2-part tariff under the 2006 Determination will continue to be charged that tariff. We have accepted this recommendation. Meter is defined in the Final Determination as:

- Corporation Meter
- an Approved Meter Equivalent;
- where a licence holder has a single off-take point from Unregulated Rivers or Groundwater, the User Meter installed on or near that off-take point; and
- where a licence holder has multiple off-take points from Unregulated Rivers or Groundwater and has a User Meter on all off-take points, each of the User Meters installed on or near those off-take points.

Corporation Meter means a meter that is installed by or on behalf of the Corporation

User Meter means a mechanical, electromagnetic or similar apparatus where:

- the apparatus is not a Corporation Meter; and
- either:
    - the apparatus complies with the national water meter standards developed under the National Water Initiative; or
    - the apparatus complies with the NSW Interim Water Meter Standards issued by the Corporation; or
    - the apparatus:
        - accurately measures and records the amount of water extracted by a licence holder and is manufactured for that purpose; and
        - is installed appropriately on or near a licence holder's off-take point or points from an Unregulated River or Groundwater; and
        - the Corporation is notified in writing of the existence of the apparatus prior to the commencement of the financial year for which an annual charge is calculated, of:
            - the existence and specifications of the apparatus;
            - the manufacturer and model of the apparatus; and
            - a description of the location and installation of the apparatus.

Approved Meter Equivalent means an apparatus or a methodology for the quantification of the volume of water extracted or to be extracted from Unregulated Rivers or Groundwater by reference to factors other than direct measurement of water extracted, that was approved by the Corporation or the Minister prior to the Commencement Date.

Where a user meter, or a meter equivalent, is read by NOW or its billing agent the user will be subject to a meter reading charge designed to recover the cost of that activity.

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

Decision:

8 IPART's 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 2011 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 2006 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 rivers and groundwater may have been somewhat lower than the figures listed above.

The factors we considered in making our 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).

After considering the Draft Report and Determination, NOW has advised that it:

> …supports the simplification of the pricing formulae and the removal of the cap calculations.[98]

6.4.2 Stakeholder views on the price path

In response to the Issues Paper and NOW's submission, there was general stakeholder support for the retention of a cap on annual bill increases to mitigate customer impacts. However, stakeholders' views differ on the level of the cap and whether it cap should be coupled with a glide path. For instance at that time:

- NSW Irrigators' Council (NSWIC) and Murrumbidgee Irrigation expressed support for the retention of a cap and argued that a glide path was necessary. NSWIC was dismissive of NOW's argument that the cap was 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%.

In response to the Draft Determination, some stakeholders such as Lachlan Valley Water supported IPART's proposal to model prices to incorporate a 20% cap on annual increases in forecast bills. Other stakeholders argued that the cap on forecast bill increases was set too high.[99]

Several stakeholders opposed NOW's proposal to move to 100% cost recovery. Western Murray Irrigation, 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.

Western Murray Irrigation noted that, under the Draft Determination, some valleys are at 100% cost recovery, whereas others are substantially lower as a result of IPART's decision to include a 20% cap in the modelling of prices. It argues that this provides a perception that some valleys are penalised relative to others. However, IPART notes that 'forgone' notional revenue, where valley is charged less than 100%,

---

98 David Harriss, Response to the Draft Determination and Draft Report for the Review of Prices for the Water Administration Ministerial Corporation, 29 November 2010.

99 For example, Mr and Mrs Gowing submission to Draft Report, July 2010.

is expected to be recovered from Treasury, and hence 100% cost recovery valleys are not subsidising other valleys.

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, 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.

In other words, we consider that this approach achieves an appropriate balance between allowing NOW to gradually transition towards higher levels of cost recovery, and 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 will 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 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
- the sum of the fixed and usage charge under the 2-part tariff equals the fixed charge under the 1-part tariff.[100]

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.

[100] 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 2011 Determination period (2011/12). However, after 2011/12, their forecast annual bill increases are capped at 20% per annum.

6.5 The minimum bill

Decision:

9 IPART's 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 Water Access Licences [WALs] are licences with very little or no entitlement volume attached to them. These licences were created specifically to facilitate trading, by allowing water users to access water on a temporary basis without owning permanent access rights (unit shares) to water. Small and zero share WALs are created either by application to DNR, or when existing licence holders sell off their unit shares to other licence holders. DNR expects these licences to grow rapidly.
>
> In its submission in response to the Draft Report, DNR noted that transaction fees recover the administrative costs of processing an application for, and creating, a small or zero share WAL. However, it incurs ongoing administration costs because of its responsibility to maintain the licensing database and monitor licence conditions. The Draft Report prices did not provide a mechanism to recover these costs, and DNR therefore proposed the Tribunal introduce a minimum bill for all water sources.
>
> The Tribunal is satisfied that DNR incurs ongoing administration costs for small and zero share WALs. It therefore considers that a minimum charge should be applied to all water sources, including zero and small share water access licences.[101]

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:

[101] 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.

- $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

In response to the Issues Paper and the Draft Determination, a number of stakeholders argued for an increase in the minimum bill. For instance:

- The NSW Irrigators' Council, Gwydir Valley Irrigators' Association, Richmond and Wilson Combined Water users 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 and Lachlan Valley Water also supported a higher minimum bill to reflect the administration costs of these accounts.

In response to the Issues Paper, the 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. In response to the Draft Determination, the Hunter Valley Users' Association reiterated this point.

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. This 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%.[102] We consider this warranted because, unlike other charges, the minimum bill remained constant (in real terms) through 2006/07 to 2009/10. In

[102] 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.

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 stakeholder support 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 to this review.

Further we note that our analysis of NOW's licensing data suggests that NOW has not been levying the minimum bill on some 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. In response to the Draft Report, NOW advises that it has issued bills to zero share licence but did not bill unregulated river and groundwater domestic and stock licences. Subject to obtaining Ministerial approval and consultation with users, NOW has undertaken to bill these users from July 2011.[103]

The water management prices in this Report and Determination have been modelled assuming all licences with an entitlement of zero or greater 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

Decision:

10 IPART's 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 the allocated share of the water resource for that year as set under the relevant Available Water Determination and, if metered, usage.

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.

[103] NOW, Response to IPART's Draft Determination, 29 November 2010, p 18.

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, in response to the Issues Paper the Gwydir Valley Irrigators Association, Namoi Water, and Lachlan Valley Water 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.

IPART's Draft Determination sought to achieve this objective for supplementary groundwater entitlement holders. In response to the Draft Determination, the Gwydir Valley Irrigators' Association[104] (GVIA) suggested an improvement to the phrasing of the Determination to better realise this objective. We have accepted this suggestion.

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 the 2010 State Water Determination.
- 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.[105] Therefore, for reasons of practicality, we consider that these licences should be subject to the minimum bill.

[104] Gwydir Valley Irrigators Association submission, 30 November 2010.
[105] 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 allocated share of the water resource for that year as set under the relevant 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

Decision:

11 IPART's 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.

The CIE study examined the rationale for differential pricing of irrigator corporations, the drivers of NOW's water resource management (WRM) costs, including the number of licences and the presence of irrigation corporations, and the relationship between these costs and the activities that irrigator corporations undertake.

The CIE study noted that the then Department of Natural Resources (DNR) stated that none of its WRM costs depend on the number of customers, nor are they affected by the presence of Irrigator Corporation Districts. As CIE reached the view that

> this implies that there is no case for differential pricing among customers with respect to the WRM (water resource management) costs of DNR.[106]

Further, CIE study noted that while irrigator corporations argue that activities that they undertake to comply with their licensing conditions provide information that can be utilised by DNR in undertaking its WRM activities, the DNR disputed that this mitigated or reduced the cost of its WRM functions.[107]

In addition, CIE reached the conclusion that there was no reliable basis for allocating DNR's WRM costs on a differential basis between its customer types.[108]

---

[106] CIE, *Review of Price Discounts for Wholesalers*, March 2006, p 14.
[107] CIE, *Review of Price Discounts for Wholesalers*, March 2006, p 14.
[108] CIE, *Review of Price Discounts for Wholesalers*, March 2006, p 20.

In summary CIE concluded that:

> on balance, the proposition of this review is that there are insufficient grounds for differential pricing with respect to DNR's WRM costs.[109]

6.7.1 Stakeholder submissions on rebates for large entitlement holders

In response to the Issues Paper, 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.

In response to the Draft Report, the NSW Irrigators Council stated its support for the re-introduction of rebates for large users. Western Murray also noted that it had not benefited from payments being made by NOW to other irrigator corporations.

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.

---

[109] CIE, *Review of Price Discounts for Wholesalers*, March 2006, p 14.

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

Decision:

12 IPART's 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.

IPART notes that pricing status of stock and domestic basic rights is different to stock and domestic licences issued by NOW and that this should be addressed before the next determination.

IPART's determination applies to all licensed water users.

In its response to the Draft Determination, NOW acknowledges that due to a long standing administrative arrangement it has not billed water management charges applicable to unregulated river and groundwater domestic and stock licensees. NOW suggests that subject to the approval of the Minister for Water and consultation with users, it will bill unregulated river and groundwater domestic and stock licensees from 1 July 2011.[110]

In relation to stock and domestic rights holders, NOW notes that even if a charge was set by IPART at this time it does not hold information necessary for billing right holders on unregulated rivers.

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, in response to the Issues Paper, 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.

[110] NOW, Response to IPART's Draft Determination, 29 November 2010 p 18.

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.

In response to the Draft Report, Border-Rivers-Gwydir Catchment Management Authority supported IPART's intention to review whether basic rights holders should contribute to NOW's costs and consult with users at the next price review. However, a number of other stakeholders including Gwydir Valley Irrigators' Association and Western Murray Irrigation argued that these charges should be set from 1 July 2011.

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 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 they currently use)
- NOW is currently developing a policy on basic rights, which will have implications for how these rights are managed, and potentially for 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.

7 Allocation of the user share across water sources and valleys

The decision to set water management prices by valley for regulated and unregulated rivers and to transition groundwater prices towards a coastal/inland split made it necessary 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 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 decision, the process of consideration and our analysis in more detail.

The proportion of costs allocated to each valley and water source has not changed between the Draft Report and this Report. There are, however, minor adjustments to the costs allocated to each value, reflecting a small change in the notional revenue requirement associated with the decision to increase the WACC by 10 basis points.

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

Decision

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

Table 7.1 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	1.53%	1,701	1.35%	55	2.99%	152	1.94%	2,374
Gwydir	2.12%	2,367	2.22%	90	5.72%	290	2.26%	2,761
Namoi	2.29%	2,555	1.67%	68	3.11%	158	2.28%	2,784
Peel	0.55%	618	0.41%	17	0.40%	21	0.54%	657
Lachlan	4.65%	5,181	4.38%	178	6.25%	317	4.67%	5,705
Macquarie	4.16%	4,631	4.10%	167	6.47%	328	4.22%	5,148
Far West	0%	0	0%	0	0%	0	0%	0
Murray	10.57%	11,772	10.47%	426	26.45%	1,341	11.11%	13,558
Murrumbidgee	9.48%	10,564	10.61%	432	30.23%	1,533	10.32%	12,595
North Coast	0.18%	198	0%	0	0%	0	0.17%	202
Hunter	3.49%	3,889	0%	0	0%	0	3.19%	3,895
South Coast	0.31%	344	0%	0	0%	0	0.28%	346
TOTAL (REG.)	39.34%	43,820	35.20%	1,432	81.63%	4,139	40.98%	50,026
Unregulated								
Border	0.71%	792	1.65%	67	0.33%	17	0.73%	890
Gwydir	0.82%	918	1.93%	78	0.73%	37	0.86%	1,045
Namoi	1.32%	1,467	4.26%	173	1.64%	83	1.44%	1,754
Peel	0.29%	321	0.65%	26	0.21%	11	0.30%	362
Lachlan	0.75%	837	1.14%	46	0.47%	24	0.75%	909
Macquarie	1.84%	2,052	3.93%	160	0.98%	50	1.87%	2,287
Far West	2.61%	2,910	5.15%	210	2.21%	112	2.93%	3,577
Murray	1.09%	1,210	3.23%	131	0.62%	31	1.15%	1,402
Murrumbidgee	2.42%	2,701	7.40%	301	0.88%	45	2.56%	3,121
North Coast	6.23%	6,945	0%	0	0%	0	5.81%	7,098
Hunter	4.71%	5,248	0%	0	0%	0	4.34%	5,299
South Coast	9.79%	10,900	0%	0	0%	0	9.04%	11,031
TOTAL (UNREG.)	32.59%	36,301	29.32%	1,193	8.08%	410	31.77%	38,775
Groundwater								
GW Inland	22.31%	24,854	35.48%	1,444	10.29%	522	22.00%	26,849
GW Coastal	5.76%	6,415	0%	0	0%	0	5.26%	6,415
TOTAL (GW)	28.07%	31,269	35.48%	1,444	10.29%	522	27.25%	33,264
Total[a]	100%	111,390	100%	4,069	100%	5,070	100%	122,064

Note: Tables 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 decision reflects our findings that:

- NOW's proposed methodology for allocating the user share of its total efficient costs of monopoly services 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 has been amended to ensure that these costs are only allocated to inland valleys.

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:

- Expenditure is recorded under the different cost codes based upon the nature of the activity (eg, 'surface water quantity monitoring').
- 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).
- 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.

For example, under this methodology, if a valley has 10% of NOW's water gauging stations, 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.[111]

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

7.3 PwC's analysis of NOW's 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."[112]

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 clearer and more 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.[113] This report is available on IPART's website.

7.4 Stakeholder comments on NOW's proposed methodology

In response to IPART's Issues Paper and NOW's December 2009 submission, 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 others.[114] Stakeholders also expressed a general concern that the methodology was not sufficiently explained or justified.

In addition, stakeholders in coastal valleys (such as Coastal Valleys Customer Service Committee[115] and MidCoast Water[116]) questioned the allocation of Scenario 2 costs to their valleys as these costs by definition, relate to the Murray-Darling Basin.

Murrumbidgee Irrigation[117] 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).

In response to IPART's Draft Determination and Report, Lachlan Valley Water[118] has supported the cost driver approach but has raised concerns about the selection of cost drivers and made suggestions as to how it could be improved in the future. For

[112] Ibid, pp 50 and 55.
[113] Ibid, pp 45-55.
[114] NOW submission, December 2009.
[115] Coastal Valleys Customer Service Committee submission, 16 June 2010.
[116] MidCoast Water submission, 28 January 2010.
[117] Murrumbidgee Irrigation submission, 16 June 2010.
[118] Lachlan Valley Water submission, 30 November 2010.

example, it queries why the number of active monitoring bores has been used to allocate 'Groundwater modelling costs', as opposed to the actual FTE resources undertaking modelling. Moreover, Lachlan Valley Water[119] has urged IPART to require NOW to provide sufficient information on its costs and cost drivers, to enable both IPART and stakeholders to review and assess the suitability of these drivers over time. IPART notes Lachlan Valley Water's suggestions about potential future refinement of the cost driver approach and the need to provide transparency about the cost drivers selected and consequential impacts for pricing. As set out in Chapter 13, IPART has included reporting on cost drivers in the annual reporting framework. Improved transparency about the cost drivers selected will provide a foundation for evaluating suggestions about the potential refinement of cost drivers at the next determination.

Submission from the MDBA regarding cost allocations

The MDBA[120] submission stated that although the underlying approach used by NOW has some merit, the application of cost drivers to determine the percentage contribution by valley does not always produce results appropriate for the MDBA's contribution.

For example, it considers that the costs apportioned to the Lachlan Valley for 2 of NOW's cost codes appear to be inappropriate - as that kind of activity is not undertaken in the Lachlan. Instead, the MDBA suggests that the most appropriate cost allocation methodology was that used in the 2006 Determination. (In 2006, IPART allocated MDBA costs across regulated rivers only, based on long-term average usage volumes. Under that approach, 5% of costs were allocated to the Lachlan Valley.)

We note that although the MDBA[121] has raised some concerns regarding cost allocations, there are a number of inconsistencies associated with its recommended approach. For example, under this Determination, a proportion of MDBA costs are allocated to unregulated rivers and groundwater users; whereas the 2006 Determination allocated MDBA costs only to regulated rivers. The MDBA has acknowledged that some of its activities are related to unregulated rivers and a very small component to groundwater.

This highlights the limited information that is available to allocate MDBA costs to valleys and water sources. We consider that the method applied in this Determination represents the best available options as:

- it is consistent with the allocation of all other costs
- it results in overall allocations that are broadly in line with MDBA expenditure in those valleys and water sources.

---

119 Lachlan Valley Water submission, 30 November 2010.
120 MDBA submission, 30 November 2010.
121 MDBA submission, 30 November 2010.

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. Specifically, 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 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 at this time.

Therefore, in reaching our decision on the allocation of the user share across water sources and valleys, we have generally used NOW's proposed method. However, we identified 3 problems with NOW's 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 their 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'.[122] We found a logical flaw in this process which had the effect of shifting costs from unregulated river and groundwater licence holders to regulated river customers. We corrected for this error by allocating relevant costs on the basis of extraction related entitlement only (rather than applying NOW's 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. The impact of this step change for each valley and water source is further explained in Appendix O. While this allocation methodology may be refined over time, we expect that, unless there is a

[122] 'Extraction related entitlement' is entitlement less dedicated environmental flows.

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.

8 Entitlement volumes and usage forecasts

As discussed in Chapter 6, IPART has 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[123]
- 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 costs, 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 decisions on:

- the appropriate entitlement volume to use in setting entitlement charges for each water source and valley[124]
- the appropriate entitlement volume to use in setting entitlement charges for the major water utilities (Sydney Catchment Authority and Hunter Water Corporation)

---

123 The definition of a meter is shown in Schedule 5 of the Determination.

124 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.

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.

Our decisions on usage forecasts have not changed between the Draft and Final Determinations, although a minor adjustment has been made to the entitlement volume reported in the Draft Report for Hunter Water to reflect an error in NOW's submission to the Issues Paper. This error did not affect the calculation of prices.

8.1 Summary of decisions on entitlement volumes and usage forecasts

Decisions:

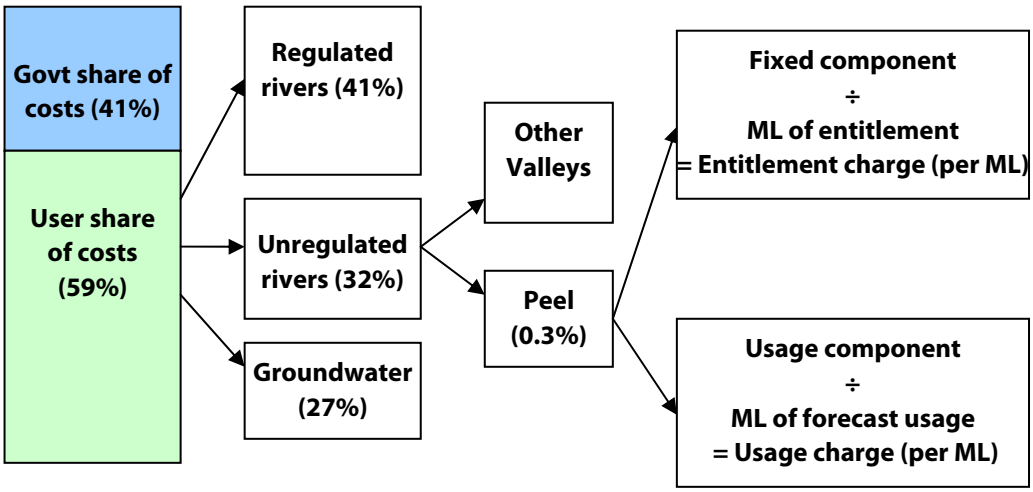
14 For the purpose of setting fixed charges (per entitlement), IPART's decisions are to:

- adopt the entitlement volumes provided by NOW for all water sources and valleys as set out in Table 8.1 to Table 8.4
- adopt the entitlement volumes provided by NOW for Hunter Water Corporation and the Sydney Catchment Authority as set out in Table 8.5.

15 For the purpose of setting usage charges (per ML of water extracted), IPART's 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, as listed in Table 8.5
- 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, as listed in Table 8.5.

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 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 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 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 Decision on entitlement volumes for regulated rivers – high security, compared with those used for the 2006 Determination

Valley	2006 Determination (ML/annum)	2011 (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: IPART, *Review of Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010 – Final Report*, September 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 Decision on entitlement volumes for regulated rivers – general security, compared with those used for the 2006 Determination

Valley	2006 Determination[a] (ML/annum)	2011 Determination (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%

[a] Refers to forecasts for 2009/10.

Note: Totals may not add due to rounding.

Source: IPART, *Review of Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010 – Final Report*, September 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[125]
- for previous determinations, valley boundaries for unregulated river entitlements were not always clearly defined, as the allocation of licences to specific areas occurs in the process of developing water sharing plans.[126]

[125] 2001 was the start of conversion of unregulated licences 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.

[126] Correspondence received from NOW, 10 March 2010.

Table 8.3 Decision on entitlement volumes for unregulated rivers, compared with those used for the 2006 Determination

Valley	2006 Determination (ML/annum)	2011 Determination (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, *Review of Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010 – Final Report*, September 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 NOW's data
- Central West (as identified in the 2006 Determination) has been split into 2 separate valleys in NOW's data (Lachlan and Macquarie).

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 in making a comparison.

Table 8.4 presents a limited comparison of the entitlement volumes for groundwater proposed by NOW for the 2011 Determination and those used for the 2006 Determination.

Table 8.4 Decision on entitlement volumes for ground water for 2011 Determination, compared with those used for the 2006 Determination

Valley	2006 Determination (ML/annum)	2011 Determination (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 Determination, 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. This data did not reflect the large-scale changes 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.

Following the release of the Draft Report, we did not receive any stakeholder submissions addressing this issue.

We are satisfied that NOW's entitlement data are the best available. Therefore, our 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

- 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 Hunter Water Corporation and Sydney Catchment Authority in the 2006 Determination

For the 2006 Determination, we decided to charge Hunter Water Corporation and Sydney Catchment Authority on the basis of extraction, rather than 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.[127] We also note that some stakeholders have provided information to this review that suggests there are many other users who do not use 100% of their entitlement.[128]

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; in other words, on the same basis as other users. However, both 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.[129]

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.

[127] 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.

[128] 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.

[129] 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 Decision on entitlement for HWC and SCA and a comparison of average historical extraction volumes with their entitlement volumes (ML/annum)

Valley	Average historical extraction	Decision on entitlement	Average extraction as a proportion of entitlement
HWC	57,500[a]	368,000[c]	16%
SCA	545,770[b]	980,000	56%
Total	603,270	1,348,000	44%

a As provided by HWC in its June 2010 submission.

b As provided by SCA in its June 2010 submission.

c An error identified in Draft Report has been corrected and the entitlement of another major Hunter user excluded. This error did not affect the calculation of prices.

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

Hunter Water and SCA's submissions to the Issues Paper and public hearing

In its June 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 was 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,[130] 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 that dam to supply customers. It stated that this amounts to paying twice for the same water, and is hence inequitable.

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

[130] 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.

Hunter Water and SCA's response to the Draft Determination and Report

IPART's Draft Determination provided for charges to be based on entitlement volumes. In response, HWC and SCA submitted that it was inappropriate to set the fixed component of their water bills in relation to entitlement volumes.

The SCA has put forward the view that if an entitlement is not tradeable, it cannot be used as the basis for setting charges. Both HWC and SCA reiterated their arguments made at the public hearing that a proportion of their entitlements have been 'double counted', as they only extract water from one location.

We note that these comments do not represent additional or new information, but that both utilities continue to oppose a move to entitlement-based charges.

8.3.3 IPART's analysis of 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
- 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 noted that the long-term average extraction limits of the water sharing plans meant 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 notional 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 future water management costs through their new water prices.)

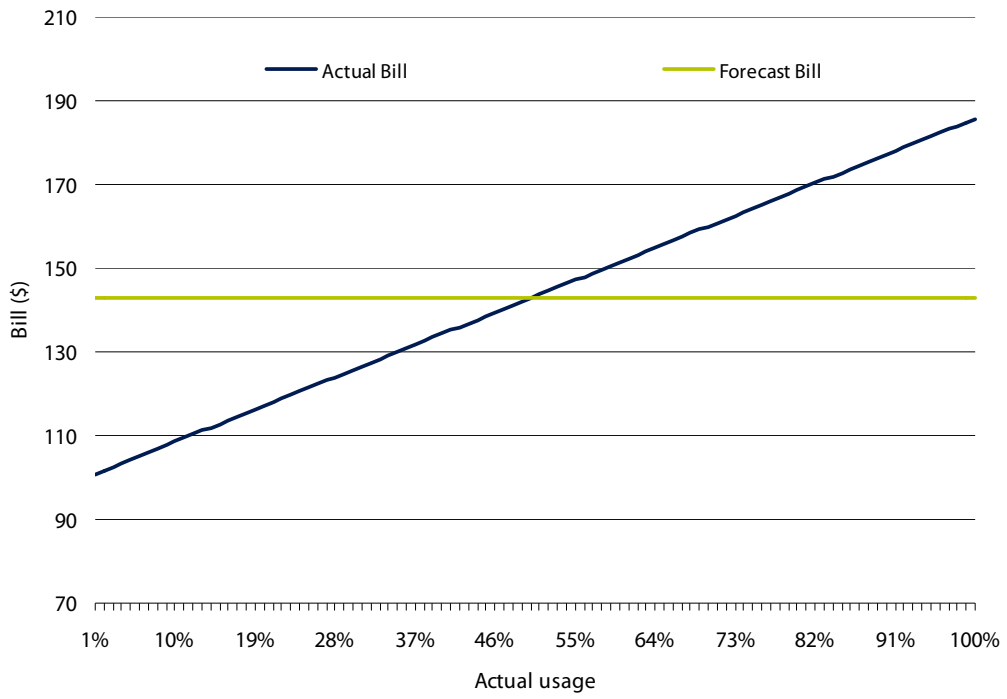
In light of these reasons, we are satisfied that the position of HWC and SCA is not sufficiently different from other users to justify the inequities that would arise from acceptance of the utilities' proposals. Therefore, for this Determination, we have incorporated the full entitlements of HWC and 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 needed to make assumptions about how much water will be extracted from each water source by valley over the 2011 Determination by metered water users. The accuracy of these assumptions has a big impact on NOW's cost recovery and users' bills over this 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, 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), which is a river system model widely applied in NSW for the development of water sharing and water resources plans in regulated rivers and some other sources, or
- assumptions about future metered water usage.

For the 2010 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 Determination, we considered NOW's proposed usage forecasts, stakeholder comments and our own analysis.

8.4.1 NOW's proposed usage forecasts

In its December 2009 submission, NOW proposed that, if IPART decided to set a 2-part tariff[131], usage forecast for regulated rivers be based on a 15-year moving average of actual extraction levels. This is the same approach as State Water proposed for the 2010 State Water 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
- 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.

In its first submission, NOW did not make a proposal on the usage forecasts for unregulated rivers and groundwater. In response to requests for further information from IPART, NOW provided some 2002 unregulated river survey data, incomplete data on groundwater usage, and an opinion as to the appropriate level of usage forecasts for unregulated rivers and groundwater.

[131] 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.

NOW's response to the Draft Report and Determination

In setting unregulated river and groundwater usage charges for the Draft Determination, we assumed that licence holders would extract 100% of their entitlement (with the exception of Hunter Water Corporation and the Sydney Catchment Authority).

In NOW's response to the Draft Report, it argued that unregulated and groundwater usage is generally well below 100% of entitlement. For unregulated rivers, it cites survey data from 2002 that shows extractions from rivers in the Murray-Darling Basin can range from 2% to over 80%, with an average estimate of 56%. NOW notes that "Figures of usage on the coastal rivers is less extensive, but for the Hawkesbury-Nepean for 2006/07 the usage is estimated at 32%." It also stated that:

> Given the greater variability of supply, the usage factor for the unregulated rivers would generally be less than for the regulated rivers. This would suggest that average usage in the unregulated rivers is below 50% of entitlement.[132]

We note that this information was provided to IPART prior to the publication of the Draft Report, and its reliability for pricing purposes was considered by us in deciding on usage forecasts for the Draft Determination.

In terms of groundwater, NOW stated the 6 major groundwater systems that are metered have an average usage factor of around 70% of entitlement, while for the smaller unmetered systems the figure is about 25%.

NOW is concerned that if usage charges are set assuming 100% extraction, then it will significantly under-recover its water management costs as the meter program is rolled-out and more users become subject to the 2-part tariff. According to NOW:

> A more realistic assessment of forecast usage would be a maximum of 50% of entitlement for the unregulated rivers. For groundwater a figure of 70% is more appropriate, since the major groundwater systems account for the majority of groundwater extraction.[133]

8.4.2 Stakeholder comments on usage forecasts

For regulated rivers, in response to the Issues Paper, 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:

---

[132] NOW submission, 29 November 2010, p 4.
[133] NOW submission, 29 November 2010, p 4.

- 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 that this was 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.[134] 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 actual extractions, and so on.

In response to the Draft Report and Determination, a number of stakeholders maintained their opposition to regulated river usage forecasts that are based on the 20-year average.[135] No new information has, however, been provided that would provide a compelling reason for IPART change its decision.

Providing a potentially contrasting view to the GVIA, the Commonwealth Environmental Water Holder states that it would support any future moves to consumption forecast methodologies that take into account the expected impact of climate change on water availability.

As NOW did not propose usage forecasts for unregulated rivers and groundwater, stakeholders were not able to provide comment, Richmond and Wilson Combined Water Users explicitly identified it was unable to provide comment as no forecast had been provided by NOW.

8.4.3 IPART's analysis of usage forecasts

Regulated rivers

In making the 2010 State Water Determination, 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 for the same period. Therefore, our decision is to adopt the regulated river usage forecasts that we applied in the 2010 State Water Determination.

---

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

135 For example, NSW Irrigators Council and Gwydir Valley Irrigators Association have made comments to this effect.

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, *Review of bulk water charges for State Water Corporation 2010*, June 2010, p 122.

Unregulated rivers

For unregulated rivers, NOW was unable to provide usage forecasts or reliable historical usage data that can be used to generate forecasts. We note that the limited information that NOW provided before and after the Draft Determination was not sufficiently robust to be used as the basis for setting prices. We also note that this information was not included in NOW's December 2009 submission and hence, as identified by Richmond and Wilson Combined Water Users, stakeholders have been unable to provide comment on NOW's forecast assumptions.

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
- seeking information from other organisations, such as the CSIRO.

As the NSW water resource manager, we expect that NOW would be able to provide reliable 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 decision is to:

- adopt usage forecasts of 100% of entitlement (except for Hunter Water Corporation and Sydney Catchment Authority)
- 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.[136]

Until the Commonwealth approves funding for NOW's metering program and such meters are actually installed, the level of revenue risk will remain relatively small given the current low level of metering (under IPART's Draft Determination, only users with a meter are subject to a 2-part tariff). For unregulated rivers in particular, NOW has noted that only very few users are currently metered and on a 2-part tariff.

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 faced similar problems in setting forecasts for metered usage of groundwater as we encountered 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 decision is to assume 100% usage of entitlement for groundwater customers (except for Hunter Water Corporation, 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.

[136] This data was provided by each organisation in their submissions to this review.

9 Water management prices

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

We note that despite our decision to increase the Weighted Average Cost of Capital (WACC) from 7.0% to 7.1% in the final determination, final prices are the same as were included in the Draft Determination.

Decision

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

Tables 9.1 to 9.9 show the 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 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 December 2009 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. In its submission to the Draft Determination, State Water queried how users should be billed in the event that a licence is not converted by 1 July 2011. We note that under the Determination where a licence outside of the Far West has not been converted volumetric basis by 1 July 2011, the licence holder would be subject to the minimum bill until such time as the licence is converted.

Chapter 12 provides our analysis of the implications of these prices for water users and NOW. Appendix K shows the 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

Decision

17 IPART's decision is to not include conversion factors or conversion ratios in this 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 (under the Water Act) to a licence based on unit shares (under the Water Management Act). 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 the 2006 Determination 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.

No submissions from stakeholders or NOW were receive in response to this proposal following the release of the Draft Report and Determination.

9.1.2 IPART's 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 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.
- There are concerns about inequity arising from the point in time at which a licence is converted to the Water Management Act, 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 Determination. NOW has recommended that conversion ratios are not required for groundwater, and as there is no potential impact to customers and no stakeholder comments on this issue were received in response to the Draft Determination, we have excluded the conversion ratio from the Determination.

Table 9.1 Regulated river tariffs – *fixed* component of 2-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 charge 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 – u*sage* 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 charge 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	$/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 – u*sage* 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	S/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 charge 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 charge between IPART and NOW (%)
Far West	27.07	25.22	27.06	28.18	1.11	10.00	4%	37%	-33%

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

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	-4%
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 – u*sage* 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	1.6	1.88	0.64	52%
Gwydir	1.24	1.34	1.6	1.88	0.64	52%
Namoi	1.24	1.34	1.6	1.88	0.64	52%
Peel	1.24	1.34	1.6	1.88	0.64	52%
Lachlan	1.58	1.67	1.78	1.88	0.3	19%
Macquarie	1.58	1.67	1.78	1.88	0.3	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	0.8	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 charge 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: Totals or percentage changes may not add due to rounding.

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.

10 Meter service and reading charges for users on 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 around 11,000 Commonwealth Government funded meters across the unregulated rivers and groundwater of the Hawkesbury-Nepean River and Murray-Darling Basin over the coming determination period. 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.

The section below sets our 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. We note that these charges are unlikely to affect unregulated and groundwater users outside the Murray-Darling and the Hawkesbury-Nepean valleys. The subsequent sections discuss NOW's proposed charges, stakeholders' comments and our analysis.

These decisions differ from the Draft Determination in 4 ways as described below. Since the Draft Report, we became aware of an inconsistency between our Draft Report and Determination. The Draft Report incorrectly stated that dispute resolution charges and validation charges for relocated meters would apply to user owned meters. These charges only apply to government installed meters. The only charge applicable to user owned meters is the meter reading charge. 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.

At the time of the Draft Report, IPART was unable to undertake analysis of the customer impacts of these charges given the limitations of the information then provided by NOW. Using information provided by NOW in response to the Draft Report, IPART has been able to undertake some customer impact analysis. This is included in Chapter 12 of this report. IPART is concerned by the results of this analysis. It shows, that despite earlier assurances from NOW that small users will not be subject to the meter service charge, implementation of NOW's proposed metering program will mean that users with entitlement as low as 10 ML for the Hawkesbury-Nepean River and 23 ML for unregulated and groundwater users of the

Murray-Darling Basin will be subject to these charges. As a result, some users paying the minimum bill for water management charges will pay up to 7 times that amount in a meter service charge per annum. However we note that our estimates suggest that this would only apply to around 2% of users.

A key feature of NOW's proposed metering program is its internal goal of metering 95% of licensed entitlements. Given the large numbers of unregulated river and groundwater users with small entitlements, it is unavoidable that this goal will result in the installation of a large number of meters and the imposition of meter service charges on small users. As the costs implication for users are significant, IPART urges NOW to urgently undertake cost-benefit analysis of its goal to meter 95% of licensed entitlement and to make changes to the design of its metering program as warranted. The purpose of this analysis is to ensure that the benefits of metering 95% of licensed water extraction as opposed to an alternative lower level provide benefits in terms of improved water management that exceed the costs. It is recommended that the cost-benefit study report is shared with users and with IPART before the next price determination.

10.1 Summary of decisions on meter service, reading, dispute resolution and validation charges

Decision

18 IPART's decision is to introduce the meter service, reading, dispute resolution and validation charges shown in Table 10.1.

Table 10.1 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)
other meter	$213 (per meter pa)
Separate charges (government installed meters)	
Refundable deposit for Dispute Resolution[a]	$1,500 (per meter, per dispute)
Validation of a relocated meter	
mechanical meter	$105 (per meter)
other meter	$105 (per meter)
electromagnetic meter	$195 (per meter)
channel meter with mobile phone or satellite telemetry coverage	$195 (per meter)
Separate Charges (user installed meters or 'approved meter equivalents')	
Manual meter reading fee	$192 (per meter pa)

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 key differences between IPART's draft and the final decisions in relation to metering include:

- Introduction of 'other' meter category charge set at the lowest of the 5 specified meter types, ie, $213 per meter per annum – this responds to information from NOW about the potential for unforeseen combinations of technologies to be installed where field conditions warranted non-standard solutions.
- Increase the manual meter reading fee for user owned meters from $131 per meter per year to $192 per meter per annum – this reflects new information from NOW about the current frequency of meter reading under its service level agreement with State Water.
- Change the refundable deposit for dispute resolution for government installed meters from a charge which varied by meter type to a single charge. The charge increased from $105 for mechanical meters and $195 for electromagnetic meters to $1,500 per meter per dispute in response to new information from NOW about the costs and activities required to test the accuracy of disputed meters.

- The separate charge for reading a user owned meter is also to apply to 'approved meter equivalents'. Approved meter equivalents refer to other means approved by NOW for obtaining meter reads (and is defined in the determination). This is in response to new information from NOW that methods other than reading water meters are used to obtain usage data for some users on a 2-part tariff.

The reasons for these changes are discussed in more detail below.

10.2 NOW's proposal on meter service charges

NOW's supplementary metering submission May 2010

NOW's December 2009 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[137] 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).

[137] Charges for regulated rivers are levied by State Water and have been set by the 2010 State Water Determination.

- 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[138] (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.[139] 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 has 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 (where the meter is outside the 3-year warranty period). NOW has indicated that it may propose charges for these costs and activities at the next price determination.

NOW has 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 has 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.[140]

At the time of the public hearings, IPART 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. Unfortunately 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.[141]

---

138 State Water undertakes these activities, under contract with NOW.

139 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 issues paper - submissions received, 18 October 2010.

140 NOW supplementary submission, May 2010, p 8.

141 Correspondence from NOW, 15 July 2010.

In the Draft Report, we requested that NOW provide a clear framework for deciding what type of meter will be installed where and what will be the minimum size entitlement/licence that will be subject to the metering program. The information provided by NOW in response to that request is described below and is available from IPART's website.

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 submission – Metering Charges – 4 May 2010.

NOW's November 2010 response to the Draft Report

In response to our Draft Report on meter service and reading charges, NOW has raised the following issues:

- That IPART's calculated draft manual meter reading fee of $131 per meter per year is based on an assumption of 1 meter read per year. NOW suggests that the assumption is incorrect and would result in under recovery. NOW states that its latest agreement with State Water specifies an average of 1.81 readings per meter per year and therefore the meter reading charge should be:
  - manual meter reading fee: 1.81×$75 = $136
  - meter information system: $56
  - meter reading charge: $192 per meter per annum. IPART has addressed this concern in the Final Determination.
- In some cases where no 'meters' are available, NOW incurs costs from using other methods of monitoring (eg, crop assessment, electricity usage) to provide annual ML usage figures for those on a 2-part tariff and that the Draft Determination does not allow NOW to recover these costs. IPART has addressed this concern in the Final Determination.
- There is an inconsistency between the metering service charges set for State Water and NOW which results in different approaches across regulated, unregulated and groundwater sources. While IPART has set a separate manual meter reading charge for NOW on unregulated rivers and groundwater, the manual meter reading costs for State Water on regulated rivers remains in their general operating expense base. IPART has not changed its decision for the Final Determination for reasons described below.
- The Draft Determination did not include charges to be applied to non-standard type meters, leaving a potential revenue shortfall if the installed meter does not fall within the existing 5 categories of meters. NOW have suggested an additional category for 'other meter' that is not equivalent to the existing 5 categories, and that this should be set at the minimum of these meters. IPART has addressed this concern in the Final Determination.
- The refundable deposit for dispute resolution as set out in the Draft Determination was based on validation only which significantly underestimates the work involved and thus cost of resolving disputes. NOW provided estimates of between $2,735 and $5,000 for the cost of resolving disputes, while noting that for Hunter Water the equivalent charges for the cost of meter testing would be between $1,000 and $1,500 per meter. Therefore, to discourage frivolous or vexatious disputes, NOW has requested a minimum charge of $1,500 be set. IPART has addressed this concern in the Final Determination.

IPART's Draft Report requested that NOW provide a clear framework for deciding what type of meter will be installed where and what will be the minimum entitlement volume that will be subject to the metering program. In asking for this information IPART was conscious that:

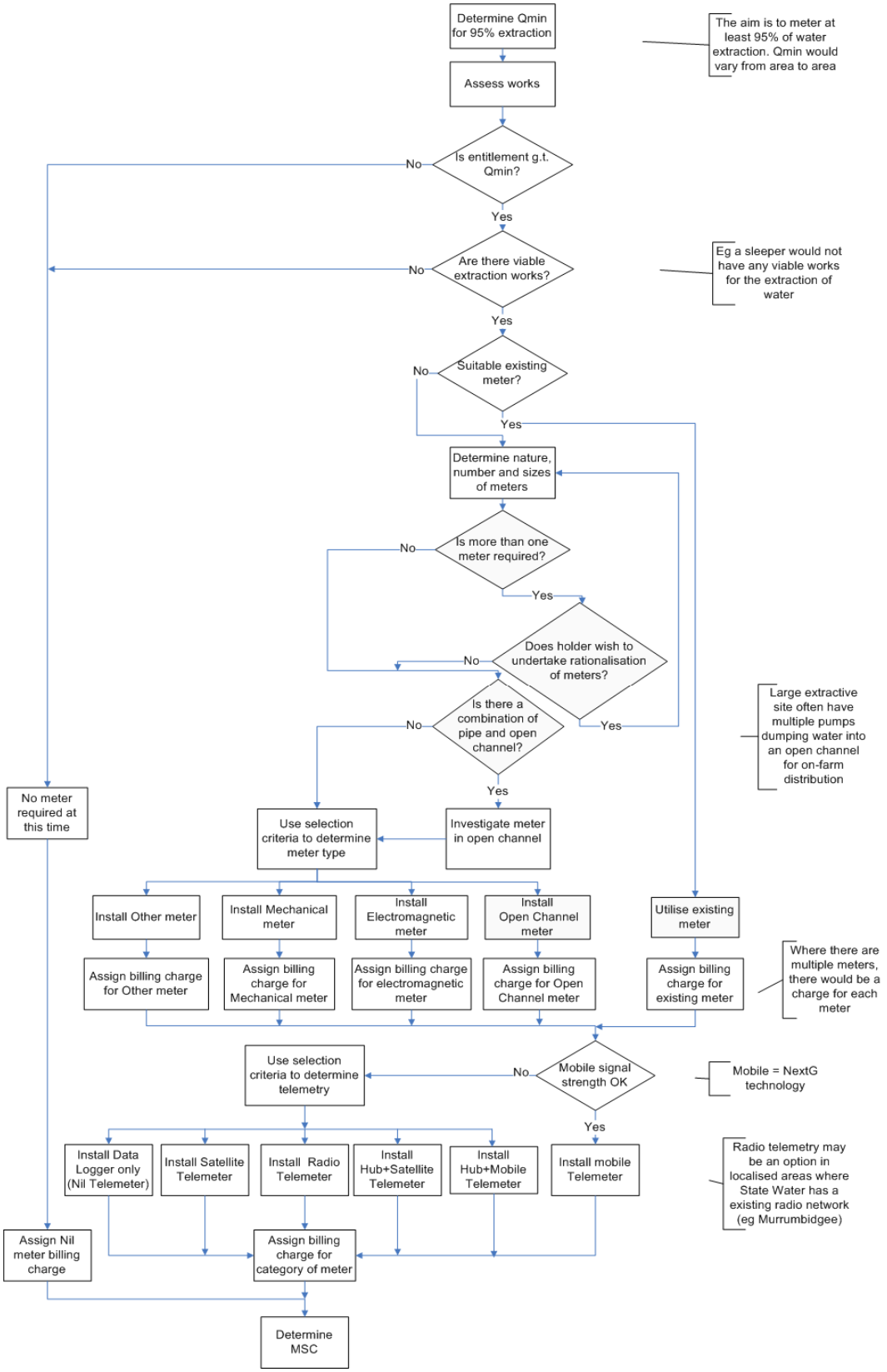
- NOW, rather than users, would control which meter type would be installed and therefore the charge the user would pay and also the operating cost arising from the installation of the meter.
- NOW had not provided information about the impact of meter service charges for customers, particularly small users.

In response, NOW advised that:

- For the roll-out of meters to unregulated river and groundwater users in the Murray-Darling Basin, the Commonwealth is still undertaking due diligence assessment of whether it will fund the capital costs. As a result, final decisions on meter types cannot be made at this stage.
- NOW is aiming to meter about 95% of licensed extraction in each valley. This goal is internally driven. NOW's reasons for selecting this value for its policy goal are not clear.
- Metering of all unregulated river and groundwater licences above 23 ML for most water sources would enable about 95% of all entitlement to be metered. However, this cut off level will not be the same for each water source throughout the state, but will vary according to local water extraction patterns.
- However, in the case of the Hawkesbury-Nepean metering project, which is funded and underway, the cut off level has been determined as 10 ML, with all holders of an entitlement above that level subject to the metering program.

NOW has also provided a flow chart (see Figure 10.1) of the decision-making process it will undertake in assessing what types of meter are to be installed and in what locations. We note that the framework does not specify the criteria used to determine the meter type and the telemetry to be installed.

Figure 10.1 NSW Office of Water – Metering decision making framework



Source: NOW submission to the Draft Report, November 2010.

10.3 Stakeholder views on NOW's proposed meter service charges

In response to NOW's submission 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[142] argued that the cost of the metering program is greater than the value of the water being metered. 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[143] and Murray Irrigation[144] 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[145] 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. 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 Farmers Association[146] 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. It also identified those components of the meter service charge they consider to be appropriate. This included 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.

[142] Coastal Valleys Customer Service Committee submission, 16 June 2010, pp 2-3.
[143] Murrumbidgee Irrigation submission, 17 June 2010, p 3.
[144] Murray Irrigation submission, 16 June 2010, p 8.
[145] Lower Hawkesbury-Nepean Users Association submission, 16 June 2010, pp 4-5.
[146] NSW Farmers Association submission, 15 June 2010, p 2.

Further, in response to our Draft Report, Peter Draper,[147] the State Member for Tamworth reiterated concerns about the size of the meter service and reading charges. Gwydir Valley Irrigators Association (GVIA)[148] argued that meter charges should not be set until Commonwealth funding for the meter roll-out project has been approved and further detail is provided. However, GVIA[149] did support separate meter reading charges for user owned meters. The Border Rivers-Gwydir Catchment Management Authority[150] supports the establishment of metering charges.

We have considered these arguments in reviewing NOW's proposal and in making our decisions on meter service charges.

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 cost information as NOW provided to this review. To be consistent with the State Water Determination, we consider that setting transitional meter service charges for NOW based on the current available information was appropriate. Further, the Commonwealth funding agreement is conditional upon NOW having appropriate mechanisms in place to recover the operating and maintenance costs of these meters. The implementation of meter service charges would satisfy this condition. Further, a decision by IPART not to set a charge at this stage could prejudice funding negotiations.

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.[151] 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 generally apply and meters might not be maintained to ensure this level of accuracy. Therefore, we do not consider the meter maintenance costs of existing meters of zero (as reported by stakeholders in response to NOW's submission) 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.[152]

---

147 Member for Tamworth submission, 29 November 2010.

148 Gwydir Valley Irrigators Association submission, 30 November 2010, pp 11-12.

149 Gwydir Valley Irrigators Association submission, 30 November 2010, p 12.

150 Border Rivers – Gwydir Catchment Management Authority submission, 29 November 2010, p 2.

151 http://www.environment.gov.au/water/policy-programs/srwui/metering/index.html.

152 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.

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:

- The meter service charges included in this Determination are only payable by unregulated and groundwater water licensees. Whereas the meter service charges set in the 2010 State Water Determination are only payable by regulated river users. So there will be no double-counting of the costs.
- Further, user-owned meters are not subject to the meter service charge; just the lower meter reading charge. This recognises that the capital and maintenance costs of these meters are covered by the user rather than NOW.
- 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.[153]
- In relation to disputes about meter accuracy, we agree with the NSW Farmers Association's[154] view that these costs should be recovered from the individual licensee and not spread across all users. We have made a 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 for government installed meters in more detail.

10.4.1 Meter service charges

As outlined in Table 10.1, our 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
- other meter - $213 per meter, per annum.

153 Correspondence received from NOW, 20 August 2010.

154 NSW Farmers Association submission in response to our Issues Paper, received 18 June 2010, p 2.

These charges incorporate NOW's estimated operating and maintenance costs for each meter type[155] , but excludes 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 government installed meters. The costs of all other disputes regarding the meters are expected to be recovered from the general cost base.

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.

For our Draft Determination, rather than NOW's proposal of a weighted average meter service charge (which would not vary by meter type), we decided to set charges by 5 meter types.[156] 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.

However, in response to our Draft Report, NOW has stated that they may install non-standard meters that do not fit into the existing 5 categories of meters and that the Draft Determination will not allow them to recover the costs of these meters. Therefore NOW argues that an additional category should be added that covers 'other' meters, and that the meter service charge, the refundable deposit for dispute resolution and the validation of a relocated meter charge for this 'other' category should be set at the minimum of the other (specified) meter types. NOW proposes that the 'other' price be set at a level equivalent to the mechanical meter (ie, the lowest of the 5 meter service charges).

To address this concern we have decided to introduce an additional category, 'other' meter, as a catch all category for meters that do not fit into the existing 5 categories of meters.[157] The charge has been set at the lowest of the 5 meter types, ie, $213 per meter, per annum.

---

155 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.

156 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.

157 We would expect that the number of meters to be installed that do not match the above per meter type charges would be small.

Given the significant customer impact of meter service charges for small users around the bottom end of the entitlement threshold that NOW proposes to meter (see chapter 12), we considered a number of alternative approaches to cost recovery and their costs and benefits. These are discussed below.

Options considered for the recovery of meter service costs

Despite our concerns about the significant impact that meter service charges will have on small users, we have decided to maintain meter service charges for users on unregulated rivers and groundwater sources on the basis of aiming for prices that reflect efficient costs as much as possible and enhance cost transparency and accountability.

Table 10.5 below summarises the arguments for and against the different options that we considered to recover the costs of meter servicing that could mitigate the impact on water users.

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.

We concluded that these arguments for setting meter service charges and against the alternative options (shown in Table 10.5 below) were the strongest. Therefore, we decided to set separate meter service charges rather than pursue any of the alternative approaches considered for recovering the meter service costs. 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 are sensitive to the fact that a significant issue arising from our decision is that the meter service or meter reading charge could represent up to a 7-fold increase in the annual bill for licence holders with small entitlement volumes. We also note that, while 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 volume licence holders, more recent information suggests that holders of unregulated river and groundwater licences as low as 23 ML in the Murray-Darling Basin and 10 ML in the Hawkesbury-Nepean river will pay the meter service charges. Our estimates suggest that around 2% of users on the minimum bill are likely to be subject to the meter service charge.

A key feature of NOW's proposed metering program is its internal goal of metering 95% of licensed entitlements. Given the large numbers of unregulated river and groundwater users with small entitlements, it is unavoidable that this goal will result in the installation of a large number of meters and the imposition of meter service charges on small users. As the costs implications for users is significant, IPART urges NOW to urgently undertake cost-benefit analysis of its goal to meter 95% of licensed entitlement and to make changes to the design of its metering program as warranted. The purpose of this analysis is to ensure that the benefits of metering 95% of licensed water extraction (as opposed to an alternative lower level) provide benefits in terms of improved water management that exceeds costs. It is recommended that the cost-benefit study report is shared with users and with IPART before the next price determination.

IPART's recommendation

19 The cost benefit analysis of metering 95% of licensed extracted water is required for IPART's consideration of the meter service and reading charges before the next determination

Table 10.5 Arguments for and against various approaches to the recovery of meter service costs

Options	Arguments for (benefits)	Arguments against (costs)
IPART to specify a bill or minimum entitlement threshold above which the meter service charge is payable	▾ Allows IPART to exclude small users from being subject to the meter service charge	▾ Any threshold set by IPART would be arbitrary and result in some situations where users either side of the threshold are faced with significantly different costs/charges, even though their entitlement volumes may be quite similar ▾ A threshold would be relatively complex and difficult for NOW to administer (eg, particularly given the potential for water trading) ▾ NOW will not achieve its internal goal of metering 95% of extracted water ▾ NOW will under recover meter costs from users (and the Commonwealth's funding is dependent on NOW having identified sources of funding)
Transition to full cost recovery over the determination period or a number of determination periods	▾ Minimises the impact on water users over future determinations	▾ Meter service charges are only likely to increase in future determinations, once newly installed meters are no longer covered by warranties and the replacement/capital costs of meters is factored into future charges ▾ Commonwealth funding of the

Options	Arguments for (benefits)	Arguments against (costs)
		capital costs is dependent on NOW having an identified funding source for the operating and maintenance costs of the meters
Adjust the user share of costs for metering	▾ Minimises the impact on customers by reducing costs allocated to the user	▾ Reducing the user share from 100% is not consistent with the 2010 State Water Determination or the 'impactor pays' principle ▾ This approach could prejudice funding negotiations, given the funding of the capital costs of NOW's meter roll out program is dependant upon NOW having an identified funding source for the ongoing maintenance costs of these meters
Include metering costs in the general operating expense base and spread across all users	▾ Metering is a water resource management and compliance tool which has benefits to all users and the environment not just those with an installed meter. Therefore the costs should be smeared across all users. ▾ Minimises impact on small users by spreading the costs across all users	▾ To include meter costs in the general cost base, we would need to accurately forecast the meter roll out (including number of meters, meter type, valley and year). At this stage, this is highly uncertain, hence there would be a significant risk that NOW would under or over recover its meter costs ▾ This approach would be inconsistent with the approach IPART took for the 2010 State Water Determination (where separate charges payable by metered customers were set) ▾ This approach would involve cross subsidisation of meter service costs – ie, those with a lower meter/entitlement ratio would subsidise those with a high meter/entitlement ratio ▾ This approach does not encourage the modernisation of irrigation principles such as pump and layout consolidation as there is no direct charge imposed for number of pumps/meters ▾ This approach to recovering meter costs is less transparent
No change to the Draft Determination, that is, determine meter service charges	▾ Metering is a key element of water resource management – and hence meter charges are a legitimate cost of water resource management ▾ Meter charges are consistent with the 'impactor pays' principle ▾ Metering protects water property	▾ Significant impact on small water users

Options	Arguments for (benefits)	Arguments against (costs)
	rights and thus provides benefits to holders of these rights ▾ NOW's proposal to waive the meter service charges for the Hawkesbury-Nepean (ie, the only users for whom meter funding is currently approved) ▾ Consistent with the 2010 State Water Determination	

NSW Office of Water – Metering decision making framework for the selection of meter types

NOW has indicated that it will be the entity responsible for deciding what meter type is installed. Users will not be to choose a meter type. As such, NOW is concerned that disputes may arise when a more expensive meter type is installed. We are of the view 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 as this would assist IPART and users, and minimise the potential for disputes.

NOW has provided a flow chart showing the step-by-step process that they will use in making its decisions (this is shown in Figure 10.1). We note that while final decisions on the type and size of meters cannot be made at this stage and that the criteria will be based on the assessed conditions of different areas, NOW has not included clear criteria about how it will determine the: nature, number and size of meters; meter type and telemetry. However, we consider that the additional information provided will improve the transparency of NOW's decision-making and ultimately help manage potential disputes.

In future reviews, the operating costs of meters will be subject to an external review of the prudency and efficiency of the costs incurred and the forecast level of costs. This examination will occur as part of our standard practice of independently reviewing the operating and capital expenditure of water management expenditure before allowing costs to be recovered through the meter service and reading charges. Moreover, as discussed above, IPART requires evidence that the benefits of this level of meter penetration clearly outweigh the costs to users for consideration in the next determination. This will ensure that the metering project meets the cost benefit analysis criteria and thus the approach taken by NOW represents the least cost solution to the user.

10.4.2 Separate metering charges

In addition to the meter service charges considered above, Table 10.1 shows that we have decided to introduce the following meter related charges:

- manual meter reading fee for user owned meters and meter equivalents – $192 per meter, per annum
- refundable deposit for resolving disputes related to the accuracy of meter reads for government-installed meters- $1,500 per meter, per dispute
- validation of a relocated meter for government-installed meters:
- mechanical meters or 'other' meter – $105 per meter
- electromagnetic meters – $195 per meter
- channel meter with mobile phone or satellite telemetry coverage – $195 per meter.

Manual meter reading fees for user installed meters and approved meter equivalents

NOW did not propose a separate charge for reading existing, user-installed meters or approved meter equivalents. 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 and approved meter equivalents on unregulated rivers and groundwater sources.[158] 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 dependent 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.

Our Draft Report set a meter reading charge of $131 per annum based on estimated costs provided in the Nayar Consulting Report, and includes:

- 1 manual meter read per year at a cost of $75, and
- a meter information system cost of $56.

[158] 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).

In response to our Draft Report NOW argued that the meter reading charge for user owned meters should be increased from $131 to $192 per meter, to reflect the fact that their Service Level Agreement (SLA) with State Water specifies an average of 1.81 readings per year. That is,

- 1.81 manual meter reads per year at a cost of $75 (ie, 1.81 × $75 = $ 136), and
- a meter information system cost of $56.

Based on this additional information we have decided to increase the manual meter reading charge from $131 to $192 per year.

NOW also provided additional information stating that in some cases where meters are not available, other methods of monitoring (eg, crop assessment, electricity usage) are used to provide an annual ML usage figure for those on a 2-part tariff and that the Draft Determination does not allow recovery of these costs. In response we have decided to also apply the manual meter reading charge to approved meter equivalents. An 'approved meter equivalent' refers to the other methods of monitoring usage as approved by NOW by 1 July 2011 and is defined in the Determination.

State Water[159] has advised that 'approved meter equivalents' are included in State Water's service level agreement with NOW and that in the case of electricity usage they retrieve the readings of the meters via site visits and not from electricity providers due to privacy considerations. Therefore, we consider that the manual meter reading charge of $192 per meter per annum is applicable to 'approved meter equivalents' as the meter reading charge is determined by the cost of physically accessing and reading the meter and the costs associated with maintaining this information (meter information system).

NOW noted that under the 2010 State Water Determination, State Water's meter reading costs are recovered via its general water management charges, rather than a separate meter reading fee – which they note is different to the NOW determination. We have considered this issue and have decided to maintain separate manual meter reading fees for user owned meters and approved meter equivalents. This is based on the following:

- All regulated river users are metered, and therefore including the meter reading costs within State Water's general operating expense base does not result in cross subsidisation. In contrast, many unregulated river and groundwater users are not metered, and therefore including meter reading costs in NOW's general cost base would result in some cross subsidisation.

[159] Advice received by email from State Water, 11 January 2011.

- The meter service charges set in the 2010 State Water Determination do not include a cost component for manual meter reading, because the manual meter reading costs are included in their general operating expense base. State Water has indicated it will be proposing the inclusion of manual meter reading costs within its meter service charges over the next determination period and subsequently remove the costs from their general operating cost base. This differs to the meter service charges set for NOW, which include a cost component for manual meter reading. To avoid double counting of the manual meter reading costs for government owned, user owned meters and meter equivalents, we have removed the manual meter reading costs from NOW's general cost base and included a separate manual meter reading charge for user owned meters and meter equivalents. The costs of reading government owned meters are recovered directly through the meter service charge.

NOW also commented that a licence holder with multiple meters may object to multiple meter reading charges. However, we consider that:

- meter reading is a core component of water management
- the meter reading charge is reasonably cost-reflective and based on the best available information
- an additional benefit of the separate meter reading charge may be that it provides an incentive for some users to consolidate their meters, where it is feasible to do so.

Therefore we have decided to maintain separate meter reading charges (per meter, per annum).

Refundable deposits for dispute resolution for government installed meters

NOW's proposed meter service charge included $17 for costs related to dispute resolution. However, the NSW Farmers Association[160] 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 decided to set a charge for a refundable deposit, to be lodged with a dispute claim about meter accuracy of a government installed meter, 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 government (NOW) will be responsible for the maintenance/repair of faulty meters.

[160] NSW Farmers Association submission received, 15 June 2010, p 2.

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, $17 per dispute would be too low and not cost-reflective.

For the Draft Determination, we estimated the cost associated with the testing of a disputed meter based on the Nayar Consulting's estimates of the costs associated with the validation of a relocated meter (discussed below). In response to the Draft Determination, NOW provided information that showing that our draft refundable deposit for dispute resolution will significantly under-recover the costs it will incur in assessing and testing a meter in response to a users' lodgement of a dispute claim about the meters accuracy. NOW's submission to the Draft Report argued that where there was a dispute about the accuracy of a meter, the amount of work that NOW must undertake to resolve the issue is significantly greater than at the time validation. NOW states that NATA traceability is required to resolve such disputes and provides 2 estimates of the cost (sourced from the Nayar Consulting Report).

- Workshop verification, involving:
  - removal/replacement of meter: (4 hours × 2 persons × $90/hr + 10km × $1.50 per km)
  - workshop verification estimate: $1,500
  - transport/cartage: $500.

This results in an estimate of $2,735 per meter dispute

- In-situ verification:
  - NATA certified mobile test rig: $5,000 per meter.

NOW also cited similar charges imposed by Hunter Water, which they argue translates to charges of between $1,000 and $1,500 per meter, once the Hunter Water charges are adjusted to account for the larger meters that NOW proposes to install.

According to NOW:

> Based on the estimated costs from its analysis ($2,375 to $5,000 per meter) and comparisons with Hunter Water Corporation ($1,500 per meter), and to reduce the number of vexatious disputes, NOW believes that a refundable deposit of a minimum of $1,500 should be set.[161]

Therefore, our decision is to increase the refundable deposit from between $105 (for a mechanical meter) and $195 (for an electromagnetic meter) to $1,500 per meter, per dispute (regardless of the meter type). We note that these charges are significant, but the likelihood of customers being subject to this charge during the 2011 Determination is small, given:

[161] NOW submission to the Draft Report, received 29 November 2010, p 7.

- the bulk of meters are not scheduled to be installed until the end of the 3-year determination period, and disputes are only likely to arise in the year following installation
- NOW will be installing pattern approved meters, compliant with the national standards, which are designed to minimise the incidence of accuracy disputes
- NOW will be validating meters annually, which should reveal flaws and avoid disputes.

We also note that, in the absence of a refundable deposit mechanism that covers costs, NOW may be reluctant to act on a user's complaint that a meter is flawed, given the apparent testing costs.

Charges for validation of a relocated meter for government installed meters

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.[162]

However, we consider that maintenance is likely to account for more than 50% of the combined costs of meter maintenance and validation, and that 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.

We consider these validation charges to be reasonable and cost-reflective.

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

[162] 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.

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. 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 government-installed meters in the Hawkesbury-Nepean River before 1 July 2013. In making our 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 fix or take action to fix a price for the monopoly services less than the maximum price (as determined by IPART), is a matter for NOW, the Minister for Water and the Treasurer.

11 Consent transaction charges

Consent transaction charges are intended to recover NOW's efficient costs of processing those transactions. In setting the charges, we apply the 'impactor pays' principle. We consider that this principle, which recovers 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
- application of the principle 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.

After considering the issues raised by stakeholders in response to the Draft Report, IPART has decided not to change its decisions regarding consent transaction charges.

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 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 decisions on consent transaction charges

Decisions

20 IPART's 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 using the CPI.

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 using the CPI.

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: In the above table bills have been calculated based on average Pump =265L/s, average use = 154ha, average entitlements =47. Values in table have been converted from $2010/11 to $2009/10 by using the CPI.

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	Entitles holder to specified shares in available water, including conditions on access to this water
Specific purpose	
New water access licences types granted by the Minister	
Water access licence dealings	
Permanent	Includes trading of water and any changes to water access licence register
Temporary	
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	Extension of approval beyond the currency of the approval (10 years)
After expiry	

Note: For detailed description of these transactions 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 required to complete the 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 transaction

- the actual costs NOW incurs when the legislative process includes a notification requirement, 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
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 conducting 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 transactions. NOW has since identified that the forecasts it provided significantly underestimated the number of hours that it took to complete those 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, December 2009 p 82.

11.3.1 Key drivers of NOW's increased cost to complete consent transactions

NOW's forecast 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. 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.[163] 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 transaction services separately to other work functions.[164] This included all work on *Water Act 1912* and *Water Management Act 2000* functions. However, the hours incurred were not recorded to a particular 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 in 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

[163] See Table N.1 in Appendix N for a description of the key pieces of legislation.
[164] This was undertaken for a period of more than 12 months during the 2006 Determination.

2011 Determination period.[165] 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.[166] 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 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)[167] 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 it will suffer a revenue shortfall which the NSW Government will have to pick up. There is no risk to customers.

165 NOW submission, December 2009, p 82.

166 The efficiency target is even higher for 2007/08 to 2010/11 being 25.6%.

167 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 the 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 Consent 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				
Approval extensions							
Extension	234.08		0				

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 Consent Charges Model.

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:

- New water access licences granted by the Minister (within the New Water Access Licences type of consent transaction).
- 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 licences that could fall within that category. These licences include Floodplain 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
Floodplain 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 licence 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 year period, the licence holder must apply to 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 licence 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 extension applications 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 licence 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: NOW submission, December 2009, 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: NOW submission, December 2009, p 86.

11.3.5 NOW's response to our Draft Report

In NOW's response to the consent transaction charges contained in the Draft Report, it raised an issue with regard to our use of unit hours to calculate the consent transaction charges (as discussed in section 11.6.2). NOW argues that IPART's use of 1,826 hours per FTE per annum in its calculation of the costs of processing consent transactions provides no allowance for public holidays and paid leave entitlements

and therefore results in an inappropriate hourly cost rate. This rate is also inconsistent with the 1,500 hours per FTE that IPART has applied to their general operating expense base. Therefore, NOW has argued that the unit rate should be 1,500 hours per FTE to be consistent. IPART has not changed its decision for the Final Determination for reasons described below.

11.4 PwC's analysis of NOW's proposed consent transaction charges

As part of its detailed 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 2011 Determination period, and recommended that efficiencies be incorporated into these estimates. 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 increasing 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, on the basis that NOW is not processing these transactions efficiently. 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[168] stated that NOW charges $760.76 for a temporary transfer, while State Water charges $50 plus $0.50 per ML to a

[168] Coastal Valleys Customer Service Committee submission, 16 June 2010, p 2.

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 has not charged State Water for this service.

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 that further efficiency gains needed to be made. High Security Irrigators Murrumbidgee[169] 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 an ambitious target and have decided that no further reductions, including the 0.5% efficiency factor recommended by PwC are necessary.

Similarly, Gwydir Valley Irrigators Association[170] 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[171] 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[172], Murrumbidgee Irrigation[173] and Gwydir Valley Irrigators Association[174] 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. These stakeholders considered that the exclusion of overhead costs in the calculation of the costs of consent transactions costs results in a cross-subsidy by water users to water traders.

---

169 High Security Irrigators Murrumbidgee submission, 15 June 2010, p 5.
170 Gwydir Valley Irrigators Association submission, 18 June 2010, pp 37-39.
171 Western Murray Irrigation submission, 23 June 2010, p 2.
172 NSW Irrigators Association submission, 16 June 2010.
173 Murrumbidgee Irrigation submission, 17 June 2010.
174 Gwydir Valley Irrigators Association submission, 18 June 2010.

Stakeholders generally accepted the sliding scale fee structure, but Gwydir Valley Irrigators Association questioned whether the current scale accurately reflects greater effort in the consent transaction process. For example, it questioned whether there was 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 that 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 the following 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 charge to users. We consider that these 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.

In response to the Draft Report, many stakeholders (including Murrumbidgee Irrigation[175] and Murray Irrigation[176]) have reiterated their concerns that overheads related to consent transactions should not be recovered through water management charges (ie, smeared across all water users). They have argued that IPART's approach results in water users subsidising the costs of water traders. Murrumbidgee Irrigation and Murray Irrigation have argued that because a proportion of the overhead costs incurred by NOW are directly related to consent transactions, including these costs within the water management charges results in a cross subsidy. While we note that a small component of the overheads that relate to

[175] Murrumbidgee Irrigation submission, 2 December 2010.
[176] Murray Irrigation submission, 30 November 2010.

consent transaction charges are recovered through the general operating expense base we have decided not change our approach for the following reasons:

- The proportion of overheads due to consents which are included in the general operating expense base is small and difficult to identify. Separating the costs out of the overheads would be difficult and costly and only result in small changes to the consent transaction charges.
- The consent transaction charges require estimates of the number of consent transactions to occur. Including consent transaction overheads in consent transaction charges may result in a potential under/over recovery of overhead costs if estimates of the number of transactions are proven to be incorrect.
- Most of the overheads are fixed and incurred regardless of the number of transactions processed.
- 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 related to the consent transaction charges ensures that these charges do not subsidise service and usage charges.

Further Gwydir Valley Irrigators Association[177] reiterated its concerns about the inefficiency of NOW's consent transaction costs and submitted that these costs need further review. We have reviewed NOW's consent transaction costs and note that, while an efficiency factor of 21.4% has been incorporated into NOW's estimates, the biggest driver of the increases in consent transaction charges for the 2011 Determination has been the complexity involved in completing transactions (largely a result of legislative requirements). On the other hand, Western Murray Irrigation[178] supports the increases in consent transaction charges.

We have considered these arguments in reviewing NOW's proposal and in making our decisions on consent transactions discussed below.

[177] Gwydir Valley Irrigators Association submission, 30 November 2010.
[178] Western Murray Irrigation submission, 2 December 2010.

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 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 these 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 their processing 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.[179] Therefore, we consider that 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 inefficient and that the charges are excessive. For example, in its submission, Murray Irrigation[180] 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 these obligations significantly increase its time and costs.

However, where stakeholders have a better understanding of the tasks involved in completing consent transactions they are likely to be more accepting of the costs involved. This is evidenced by Western Murray Irrigation's submission[181] 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 current 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.

---

179 National Water Commission, *Australian water reform 2009, Second biennial assessment of progress in implementation of the National Water Initiative*, September 2009, p 147.

180 Murray Irrigation submission, 16 June 2010, p 10.

181 Western Murray Irrigation submission, 23 June 2010, p 2.

Regarding the efficiency factor to be applied to NOW's costs, we note that while PwC has 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 minor issues in NOW's methodology that we consider require adjustment. 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 that only steps 1 to 3 relate to advertising, while the remaining steps are 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 too high and thus not cost-reflective. Following discussions with NOW about this discrepancy, NOW has agreed that steps 4-7 should not be attributed to the task of advertising.

On this basis, NOW reduced the estimated hours for advertising from 2.85 to 1.5. 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 processing 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 involved, rather than assume the maximum wage rate for all staff hours worked.

Following discussion with NOW, they have:

- advised us of the job classifications of the staff that would normally carry out the various consent transaction tasks
- explained that, over the course of the 2006 Determination period, 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 task and applied the Crown Employee's Award Rates that apply from 1 July 2010.[182] 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 period. Table 11.14 summarises NOW's proposal, PwC's recommended efficiency adjustment and revenue required, and our finding on the revenue required for completing consent transactions.

In NOW's response to the Draft Report, NOW argues that IPART's use of 1,826 hours per FTE per annum in its calculation of the costs of processing consent transactions provides no allowance for public holidays and paid leave entitlements and therefore results in an inappropriate hourly cost rate. However, to calculate the hourly cost rate that we used to set consent transaction charges, we divided the salary grades of employees engaged in processing consent transactions by 1,826 hours and then increased this figure by 26.6% to account for on-costs, which include annual leave, long-service leave, superannuation, payroll tax and workers compensation.

[182] See Appendix N for the applicable salary scales and our assumptions.

NOW also argued that IPART has used 1,500 hours per FTE per annum in its calculations for NOW's general operating expenditure and that, therefore, using 1,826 hours per FTE for consent transactions is inconsistent. While our approach is slightly different to that used by PwC (and subsequently accepted by IPART) to calculate an FTE cost rate for the purposes of making adjustments to NOW's general cost base this difference was primarily because we were able to identify specific salary grades for personnel processing consent transactions. However, both approaches make sufficient allowance for on-costs (leave entitlements, etc). Therefore, we do not consider that the hourly rates we have used to set transaction charges should be changed.

Table 11.14 NOW's proposed, PwC's recommended and IPART's finding on the revenue required for consent transactions ($'000, $2009/10)

	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 finding	5,237	5,237	5,237	5,237	5,237

Source: PwC Review of NOW water management expenditure, p13.

12 Impacts of pricing decisions

Before finalising our pricing decisions, we considered the impact of the maximum prices set under the 2011 Determination on NOW and on water users. We also examined these prices in the context of each of the matters we are required to consider under Section 15 of the IPART Act. Overall, we are satisfied that the implications of our findings for water users, economic efficiency, the environment, and NOW's financial outcomes 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 the IPART Act and identifies where these matters have been considered in this Report.

At the time of the Draft Report and Draft Determination, we were unable to undertake customer impact analysis of the meter service charges due to limitations in the information provided by NOW about the design of its proposed metering program. Since that time, further information has been provided and IPART's analysis of the impacts of these charges on small users is included in this chapter. As discussed earlier in this Report, the analysis highlights the fact that if the program is delivered as currently planned by NOW, there are potential negative impacts for those small users of unregulated rivers and groundwater in the Murray-Darling Basin who receive a government-funded meter. IPART urges NOW to consider whether the benefits of metering will outweigh the costs and to make changes to the design of the program, as necessary.

12.1 Implications for NOW

As outlined below, we consider that the prices set by this Determination will, in conjunction with Government funding, provide NOW with sufficient revenue to carry out its monopoly services effectively and efficiently.

12.1.1 The Determination allows for an increase in NOW's efficient costs

The 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. The 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. We consider that NOW should be able to continue 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.

We note that where circumstances change priorities for water resource management (eg, floods), the reporting framework included in the Determination invites NOW to explain any change in priorities, actions, and expenditures.

Similarly, our decision to not allow NOW to earn returns on, or of, its historic capital is intended to 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 Determination allows for an increase in NOW's forecast levels of cost recovery

As well as an increase in costs, this Determination 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 Determination provides NOW with a relatively high degree of revenue certainty and stability, as approximately 80% of its forecast revenue from users is to come from fixed charges.

Table 12.1 NOW's forecast levels of cost recovery under the 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	39,378	40,843	41,843	26%
IPART's target user share of costs (via prices)	29,099	33,944	36,925	39,189	35%
NOW's forecast level of cost recovery under IPART's 2011 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 to help mitigate impacts on water users.

To enable NOW to carry out its water management activities effectively, the NSW Government will 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	27,395	26,688	29,042
Difference between notional user share and target user share	5,434	3,918	2,655
Total Government contribution to the cost of NOW's monopoly activities	32,829	30,606	31,697

Note: The figures in this table include NOW's contributions to the MDBA. In other words, 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 of the Determination for water users, we have considered:

- sample water bills, taking into account the distribution of entitlement volumes
- the contributions that NOW's charges make to farm costs
- the ability of water users to trade entitlements to mitigate the impact of higher prices.

In addition, we have considered the implications of meter service charges, which is presented in section 12.2.4. We have not considered the customer impact of changes to transaction fees, as these are one-off, upfront charges, which will only impact on users on an 'as needs' (or per transaction) basis.

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 (excluding any applicable meter service charges). In addition, NOW's water management bills as a proportion of total farm costs are generally very small, and NOW's water management prices generally represent only a fraction of the value of traded water.

We acknowledge that NOW's water management prices will increase significantly under the Determination, and that this will impact on the profitability of water users' businesses to some extent. We are sensitive to the issues raised by stakeholders, particularly in the Peel and Lachlan Valleys.[183] However, we have taken all reasonable available measures to mitigate the level of water management price increases. This includes capping annual increases in forecast water management bills at 20% when modelling prices, having PwC independently assess 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 water management price increases under this Determination are necessary to enable NOW to carry out its water management activities efficiently and effectively. Many of these activities 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 more accountable for how it spends the revenue it generates from prices over the 2011 Determination, and the outcomes it delivers (see Chapter 13).

12.2.1 Sample water management 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 water management bills for 'small' and 'large' water users (entitlement holders) for each water type.

Notably, our analysis also suggests that (excluding any applicable meter service charges):

- 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 licensees will face a bill increase of less than $100 a year by 2013/14
- Over 70% of licensees face a bill that is $300 a year or less.

[183] In particular, IPART has received submissions from the State Member for Tamworth Peter Draper, Lachlan Shire Council, and Peel Valley Water Users Association.

This suggests that, for many water users, large percentage increases in water management prices under this Determination are not likely to lead to large absolute increases in bills.

The distribution of entitlement volumes across water types

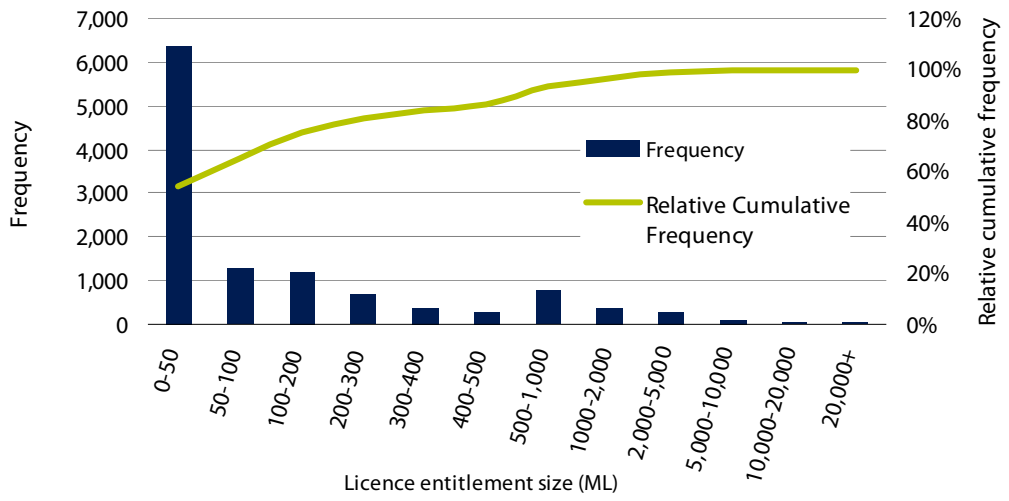
Entitlement volumes for regulated river licences

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



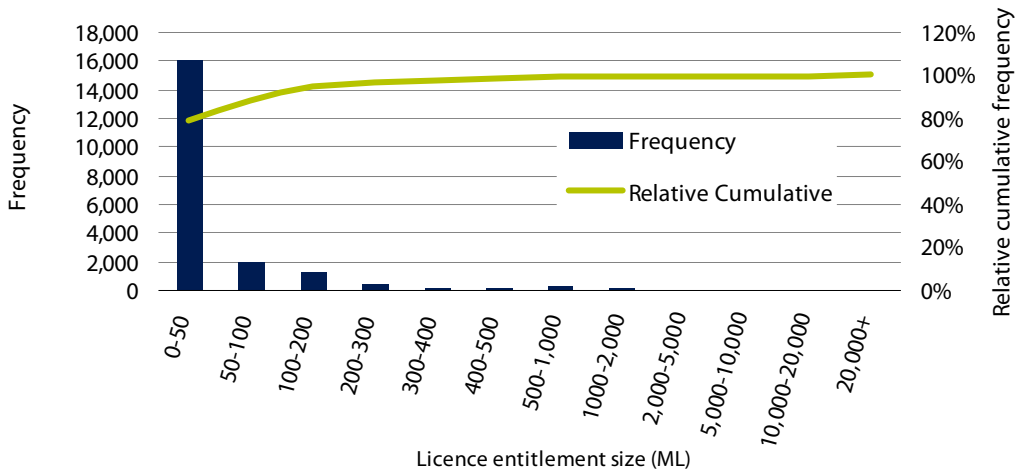
Note: Includes Water Act and Water Management Act licences, assuming 1ML= 1 unit share.
Data source: Constructed using data from NOW's internal licence database.

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
- 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



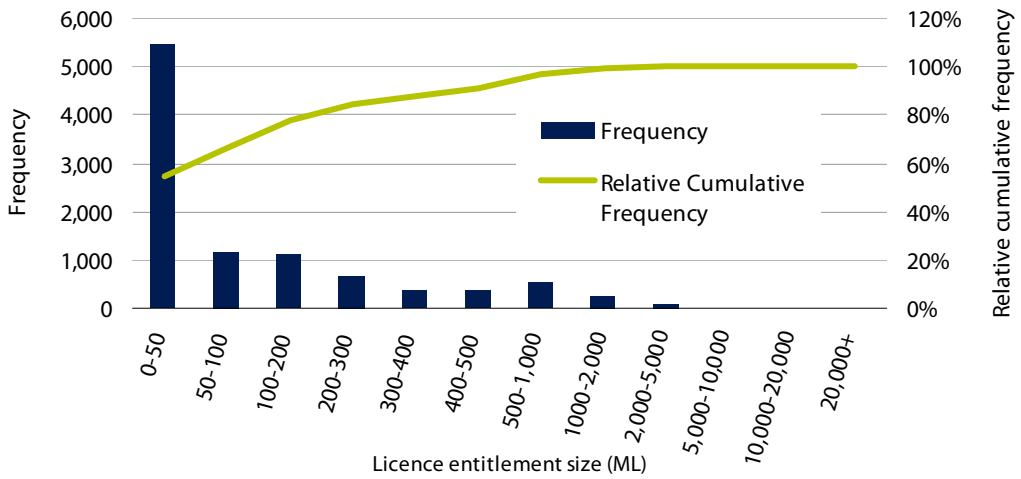
Note: Includes Water Act and Water Management Act licences, assuming 1ML=unit share.
Data source: Extrapolated from NOW's licence database.

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
- 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 for water management (excluding meter service charges). This number has not changed significantly since the Draft Report.

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 water management bills only for 'small' (100ML) and 'large' (500ML) entitlement holders, respectively and exclude any applicable meter service charges. 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 water management 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, the bills will be smaller than those listed in the table. Conversely, if usage is greater than the forecasts, bills will exceed the values shown in the table.

The 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 water management bill for high/general security user with forecast usage (excluding any applicable meter service charges) – 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 water management bill for high/general security user with forecast usage (excluding any applicable meter service charges) – 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 (excluding any applicable meter service charges) – small entitlement (100ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % increase
Border	56%	1,034	1,521	1,688	1,811	75%
Gwydir	47%	1,147	1,875	1,938	2,040	78%
Namoi	63%	1,930	2,688	2,851	2,955	53%
Peel	27%	2,019	2,689	3,114	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	767	774	10%
Murrumbidgee	67%	605	632	647	655	8%
North Coast	9%	1,121	1,372	1,557	1,769	58%
Hunter	67%	3,044	3,568	3,578	3,598	18%
South Coast	38%	2,390	3,035	3,465	3,955	65%

Table 12.7 Combined NOW/State Water bill for general security user with forecast usage (excluding any applicable meter service charges) – small entitlement (100ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % increase
Border	56%	937	1,060	1,074	1,065	14%
Gwydir	47%	876	1,086	1,099	1,091	25%
Namoi	63%	1,744	2,258	2,285	2,310	33%
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	1,144	1,202	43%
Murray	66%	647	708	706	702	8%
Murrumbidgee	67%	510	530	533	531	4%
North Coast	9%	1,009	1,218	1,378	1,561	55%
Hunter	67%	1,695	1,991	2,013	2,044	21%
South Coast	38%	1,952	2,359	2,639	2,957	51%

Table 12.8 Combined NOW/State Water bill for high security user with forecast usage (excluding any applicable meter service charge) – large entitlement (500ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % increase
Border	56%	5,168	7,603	8,440	9,056	75%
Gwydir	47%	5,737	9,377	9,690	10,199	78%
Namoi	63%	9,651	13,441	14,253	14,775	53%
Peel	27%	10,095	13,445	15,568	17,991	78%
Lachlan	37%	6,222	8,410	9,095	9,832	58%
Macquarie	45%	5,556	7,531	8,400	9,263	67%
Murray	66%	3,509	3,790	3,836	3,869	10%
Murrumbidgee	67%	3,024	3,158	3,233	3,277	8%
North Coast	9%	5,605	6,858	7,783	8,844	58%
Hunter	67%	15,218	17,838	17,889	17,991	18%
South Coast	38%	11,948	15,176	17,324	19,773	65%

Table 12.9 Combined NOW/State Water bill for general security user with forecast usage (excluding any applicable meter service charge) – large entitlement (500ML) ($2009/10)

	Forecast usage %	2010	2012	2013	2014	Total % increase
Border	56%	4,687	5,302	5,369	5,326	14%
Gwydir	47%	4,379	5,429	5,497	5,455	25%
Namoi	63%	8,718	11,289	11,427	11,552	33%
Peel	27%	5,203	6,287	7,021	7,848	51%
Lachlan	37%	4,141	5,641	5,919	6,237	51%
Macquarie	45%	4,203	5,402	5,722	6,012	43%
Murray	66%	3,233	3,540	3,529	3,508	8%
Murrumbidgee	67%	2,549	2,649	2,665	2,653	4%
North Coast	9%	5,047	6,091	6,890	7,807	55%
Hunter	67%	8,476	9,957	10,063	10,220	21%
South Coast	38%	9,761	11,793	13,196	14,784	51%

Sample bills for unregulated river licence holders

Table 12.10 and Table 12.11 show the forecast water management bills for small and large unregulated river entitlement holders, respectively, 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) excluding any applicable meter service charges.

If an entitlement holder's usage is less than we have assumed in setting water management prices, bills will be smaller than those listed in the table. As outlined in Chapter 8, we have assumed when setting prices that users extract 100% of their entitlement. 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 NOW unregulated rivers - bill for a small entitlement (100ML) with 100% usage (excluding any applicable meter service charges) ($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 NOW unregulated rivers - bill for a large entitlement (500ML) with 100% usage (excluding any applicable meter service charge) ($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 licence holders

Table 12.12 to Table 12.15 show the forecast water management 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), excluding any applicable meter service charge. Table 12.14 and Table 12.15 show that for users on a 1-part tariff, forecast changes in

NOW's water management 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, water management bills will be smaller than those listed in the tables. As we assumed that users extract 100% of their groundwater entitlement, the bills for 100ML and 500ML of entitlement will not be higher than those listed in the tables below.

Table 12.12 NOW groundwater users on a 2-part tariff excluding any applicable meter service charge - 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 NOW groundwater users on a 2-part tariff excluding any applicable meter service charge- 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	3,135	35%
Macquarie	2,319	2,783	2,971	3,135	35%
Far West	3,412	2,821	2,971	3,135	-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 NOW groundwater users on a 1-part tariff excluding any applicable meter service charge - 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 NOW groundwater users on a 1-part tariff excluding any applicable meter service charge - 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	3,135	105%
Macquarie	1,529	2,783	2,971	3,135	105%
Far West	2,275	2,821	2,971	3,135	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 Determination on farm costs, we also considered NOW water management 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 management 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. This analysis excludes the impacts of the meter service charge that may be applicable to unregulated river and groundwater users in the Murray-Darling Basin and the Hawkesbury-Nepean river where a government-funded meter is installed.

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. The information 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.[184] 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.

[184] 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 some regions.

IPART's 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 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 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 NOW 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%	2.24%	2.46%	2.60%	1.00%
Namoi	5.23%	7.30%	7.65%	7.88%	2.64%
Lachlan	2.77%	3.79%	4.04%	4.32%	1.55%
Macquarie	2.79%	3.76%	4.12%	4.47%	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%	3.21%	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 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 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 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.[185]

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.[186]

[185] NOW submission, December 2009, p 58.
[186] 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 been excluded. These trades may represent transfers of property or other events where a price has been paid for the water or has not been recorded.

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 $3,336 by 2013/14.[187] However, permanent trade market prices for that entitlement from 2005/06 to 2009/10 have been between $401,000 and $964,500.[188]

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 assessment of customer impact has taken the long-term management of this valuable asset into consideration. We are satisfied that the Determination strikes an appropriate balance between mitigating customer impact and ensuring the continued health of water assets.

[187] Assuming 100% of entitlement is extracted.

[188] Market values have been assessed using permanent trade information, accessed from the NOW's online register.

12.2.4 Customer impact of the meter service and reading charges for unregulated river and groundwater users

At the time of our Draft Report we noted that we were unable to analyse the customer impacts of meter service and reading charges on unregulated river and groundwater users given the limited information then provided by NOW. Using information provided by NOW in response to our Draft Report, we have been able to undertake some customer impact analysis. This is discussed below.

Which users are likely to be impacted by meter service and reading charges?

Information provided by NOW shows that only unregulated rivers and groundwater users located in the Hawkesbury-Nepean and Murray-Darling Basin are currently scheduled to receive meters under the Commonwealth Government funded NSW metering project. Users outside these areas (ie, North Coast, Hunter and the rest of the South Coast) are not expected to receive Commonwealth government-installed meters and therefore will not be subject to the meter service charge. However, if users in the North Coast and Hunter have installed their own meters, and these meters are being read by NOW for billing purposes, they will be subject to a manual meter reading fee (which is lower than the meter service charges). Current estimates by NOW show that this user meter reading charge would apply to around 300 users.

Within the Hawkesbury-Nepean and Murray-Darling Basin unregulated river and groundwater sources, NOW have stated that they aim to meter 95% of licensed extraction in an area. NOW estimates that this would equate to a minimum entitlement threshold of around 23 ML[189] in the Murray-Darling Basin, while 10 ML of entitlement has been determined in the Hawkesbury-Nepean.

What does this mean for users on unregulated rivers and groundwater sources?

From our analysis of the distribution of entitlement volumes across water types discussed above in Section 12.2.1 (see Figures 12.2 and 12.3) a threshold of 23 ML implies that approximately:

- 35% of users on unregulated rivers are likely to be subject to a meter service charge
- 57% of users on groundwater sources are likely to be subject to a meter service charge.

However, as noted earlier in this chapter:

- 89% of users on unregulated rivers have an entitlement of 100 ML or less
- 66% of users on groundwater sources have an entitlement of 100 ML or less.

[189] NOW has advised that the minimum cut off level in an area above which all active extraction will need to be metered will not be the same for the whole state, but will vary according to local water extraction patterns. NOW has not made final decisions about the threshold for the Murray-Darling Basin as Commonwealth funding is yet to be approved.

As most customers on unregulated rivers are not likely to be subject to the meter service charge (being below the estimated threshold), around half of groundwater users are likely to be subject to this charge. However, as most of NOW's users on unregulated river and groundwater sources are small users, if NOW continues with its stated policy goal of metering 95% of licensed extraction, it is unavoidable that meters will be installed on a significant number of small users (given the large number of licensed small users on unregulated rivers and groundwater sources). Imposition of these charges on small users is likely to have negative impacts on those customers.

To understand the impact on users at the likely minimum threshold calculated by NOW as likely to receive a meter under the NSW metering project we have forecast user total bills (including and excluding the meter service charge) for 23 ML of entitlement (see Table 12.23 and Table 12.24). In calculating the total user bill, including the meter service charge, we have used the charge for an electromagnetic meter – with data logger and mobile data modem ($364 per meter, per annum) because NOW has estimated that 80% of the meters to be installed are likely to be of this type. It should be noted that the user bill estimates including the meter service charge are only applicable if a meter has been installed in the financial year prior (to the year to which the bill relates). We have also assumed that usage is 100% of entitlement.

Table 12.23 Unregulated rivers – forecast user bills assuming 23 ML of entitlement – including and excluding the meter service charge ($2009/10)

	2010	2012		2013		2014	
Valley		**No meter**	**Meter**	**No meter**	**Meter**	**No meter**	**Meter**
Border	95	95	459	95	459	111	475
Gwydir	95	95	459	95	459	111	475
Namoi	95	95	459	95	459	111	475
Peel	95	95	459	95	459	111	475
Lachlan	114	137	501	164	528	174	538
Macquarie	114	137	501	164	528	174	538
Far West	133	124	488	133	497	138	502
Murray	118	141	505	170	534	201	565
Murrumbidgee	142	171	535	205	569	246	610
Hawkesbury-Nepean	95	95	459	95	459	95	459

Note: North Coast and Hunter are excluded from the analysis as they are not expected to receive meters under the NSW metering project.

Source: IPART analysis.

Table 12.24 Groundwater sources – forecast user bills assuming 23 ML of entitlement – including and excluding the meter service charge ($2009/10)

	2010	2012		2013		2014	
Valley		**No meter**	**Meter**	**No meter**	**Meter**	**No meter**	**Meter**
Border	95	102	466	123	487	144	508
Gwydir	95	102	466	123	487	144	508
Namoi	95	102	466	123	487	144	508
Peel	95	102	466	123	487	144	508
Lachlan	107	128	492	137	501	144	508
Macquarie	107	128	492	137	501	144	508
Far West	157	130	494	137	501	144	508
Murray	95	109	473	131	495	144	508
Murrumbidgee	95	95	459	95	459	95	459
Hawkesbury-Nepean	157	120	484	121	485	123	487

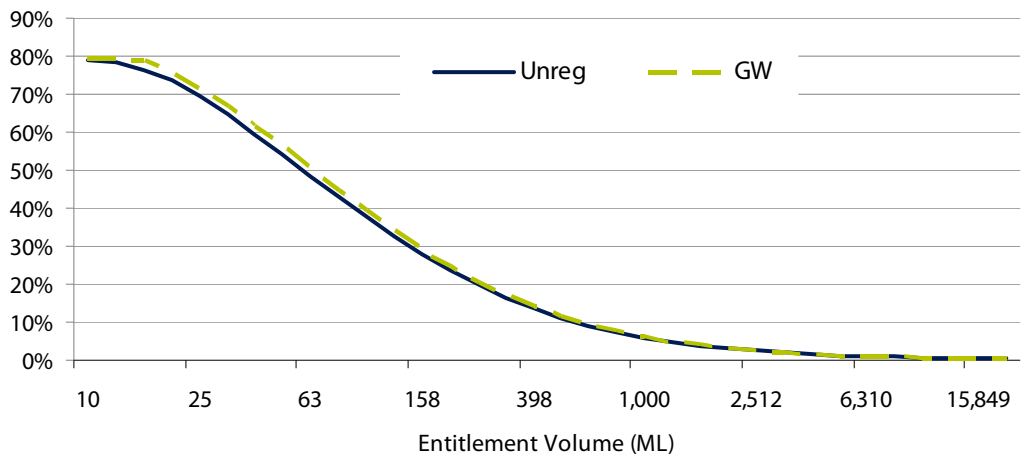
Note: North Coast and Hunter are excluded from the analysis as they are not expected to receive meters under the NSW metering project.

Source: IPART analysis.

Tables 12.23 and 12.24 show at NOW's predicted minimum threshold of 23 ML of entitlement, the maximum impact that a meter service charge will likely have on small users over the 2011 Determination period (if a meter is installed). For users at the lowest threshold of entitlement (who would otherwise be paying a small water management bill) the imposition of the meter service charge will result in increases of between 2 and 4 times the amount of their water management bills (excluding the meter service charge). However, this situation is only likely to apply to around 10% of users on unregulated rivers and groundwater sources (as they have an entitlement between 23 ML and 50 ML – and thus are the smallest users that are likely to be subject to the meter service charge).

Figure 12.4 shows the impact of the meter service charge on users total water management bills for different levels of entitlement volume. For both unregulated river and groundwater users, the meter service charge will have greatest impact where users have entitlement between 25 ML and 160 ML (with the meter service charge accounting in these cases for bill increases between 50% to 70%).

Figure 12.4 Percentage increase in bill accounted for by the meter service charge for different levels of entitlement volume



Note: This analysis excludes the North Coast and Hunter valleys as they are not expected to receive meters under the Commonwealth funded NSW metering project.

Further, to identify the upper threshold of users that are likely to be on the minimum bill for water management and subject to the meter service charge once the meter program is rolled out, we estimated the number of users that have entitlement between 23 ML and 50 ML that will be on the minimum bill. Our estimates suggest that 2% of users on unregulated river and groundwater sources will be subject to the minimum bill and the meter service charge. On unregulated rivers these users are concentrated in the Border, Gwydir, Namoi and Peel Valleys. For groundwater sources, users on the minimum bill that are likely to receive a meter are concentrated in the Murrumbidgee, Namoi and Peel Valleys. For these users, the imposition of the meter service charge represents a total water management bill between 2 and 7 times (depending on the meter type installed) the size of the minimum bill per year (ie, the water management bill). The meter service charge will have a significant negative impact on these users. The Hawkesbury-Nepean users will also be affected significantly after the meter service charge waiver period ends.

Why are we implementing meter service and reading charges that are likely to have a significant negative impact on small users?

IPART is concerned by the results of this analysis. It shows, that despite earlier assurances from NOW that small users will not be subject to the meter service charge, implementation of NOW's proposed metering program will mean that users with entitlement as low as 10 ML for the Hawkesbury-Nepean River and 23 ML for unregulated river and groundwater users of the Murray-Darling Basin will be subject to these charges. As a result, some users paying the minimum bill for water management charges will pay up to 7 times that amount in a meter service charge per year.

Despite these concerns, we have decided to implement meter service and reading charges in the 2011 Determination, noting that:

- The meter service charge will only come into effect in the financial year following the meter's installation, and NOW proposes to waive the meter service charge for the Hawkesbury-Nepean, ie, the only users for whom meter funding is currently approved.
- Functioning meters are an essential part of effective water resource management. It is reasonable to expect that metering will increase and become more widespread given the value of water entitlements. Hence meter charges are a legitimate cost of water resource management.
- Under the 'impactor pays' principle, it is appropriate that entitlement holders pay for the efficient costs of meter maintenance, servicing and reading.
- Metering protects the water property rights system and thus provides benefits to holders of these rights.
- 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 2-part tariff.

However, if NOW proceeds with its stated policy goal of metering 95% of licensed extraction, it is unavoidable that meters will be installed on a significant number of small users (owing to the large number of licensed small users on unregulated rivers and groundwater sources). As discussed in Chapter 11, given the cost implications for individual small users of this policy goal, we have recommended that NOW undertake a cost benefit analysis of its goal and make changes to the design of the program as necessary.

13 Reporting framework and other findings of our review

In our 2006 price review we expressed strong concerns 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 proposed service delivery expenditures, including testing the contestability of the tasks and services to be provided.[190]

In this price review, we have found that these deficiencies have not been remedied. 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 issues effectively in the 2011 Determination period:

- we have taken several of these issues into account when making our decisions for the 2011 Determination
- we have written to the Minister for Water about our concerns and made recommendations to address these concerns, and received his assurance that they would be addressed
- we have established an annual reporting and an end of determination period reporting framework.

The section below summarises our decisions and recommendations to the Minister and his reply. Subsequent sections explain our concerns and the issues in more detail, how we have taken these into account in making the Determination, and our recommendations to the Minister. The final section sets out our reporting, and other, expectations of NOW over the 2011 Determination period.

We note that since the Draft Determination, IPART has received correspondence from NOW and the Minister for Water in response to recommendations made about performance improvement in the Draft Report. Further, in response to comments received from stakeholders and NOW, we have made some amendments to the final reporting framework for this Determination.

---

190 IPART, *Review of Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010 – Final Report*, September 2006, p 10.

13.1 Summary of decisions and recommendations to improve NOW's systems and performance

Decisions

21 IPART's decisions are to:

- establish an annual reporting framework whereby NOW provides IPART with a 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
- establish an end of determination period reporting framework whereby NOW provides IPART with a report suitable for public release of its delivery of the Schedule of Monopoly Service order Outputs to 2014 (Appendix L) together with its submission to the 2014 price review, specified in Table 13.2
- 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 Annual reporting measures

Measure
1. 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. Reports of actual revenue received from the Commonwealth in relation to Scenario 2 expenditure
3. Reports of progress against delivery of key Monopoly Service Outputs 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

Measure
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. ▼ Ensuring that 100% of licence breaches reported are actioned. 4. Reports of cost driver units or volumes by valley – including the volume of cost driver units by cost code, water source (regulated river, unregulated river and groundwater) and valley – eg, for C01-01 this would include the number of *Office-funded gauging sites* for each regulated river and unregulated river valley.

a In allocating costs to valleys, NOW is expected to apply the cost allocation methodology adopted in the 2011 Determination.

Table 13.2 End of determination period reporting measures

Measure
1. Report of progress against delivery of the Monopoly Service Offering listed in Appendix L 2. Report of actions undertaken by NOW to improve its: ▼ consultation with users about performance, expenditures and revenue ▼ billing systems and administration ▼ financial systems, including the ring-fencing of expenditures related to the monopoly services ▼ asset management and capital planning frameworks ▼ timely, accurate and complete annual reports, as sought by IPART.

In addition, we consider that NOW should:

- undertake options analysis for its activities, including testing contestability of the services provided
- deliver the forecast water resource activities that justified our allowance of costs and provide progress reports consistent with the reporting framework
- implement strategies to address IPART's recommendations to the Minister for Water raised in correspondence in October 2010
- consider and publish a policy on levying water management charges on stock and domestic and other basic rights holders
- undertake cost-benefit analysis of its goal of metering 95% of licensed extraction and subsequently share that cost benefit analysis with users and IPART

- develop and publish a specific criteria to determine how it will make decisions about which type meter is installed and its location that have due regard to the future level of efficient operating costs of this program.

Further, to create stronger incentives for NOW to comply with our reporting framework and address the identified deficiencies in its systems and performance, we have made recommendations to the Minister for Water that NOW be required 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.

In response to IPART's letter of October 2010, the Minister for Water stated that he will be requiring NOW to address the issues raised by IPART.[191] He also provided assurances that NOW will comply with the reporting framework included in this Determination.

IPART's expectations on ring-fencing

Following release of the Draft Report, NOW sought further information from IPART about our expectations of its ring-fencing of expenditures related to the monopoly services. In November 2010, we advised that the ring-fencing recommendation:

- aims to ensure that NOW's forecast expenditure for price reviews only relates to its monopoly activities (consistent with the Water Services Order), and that it can then accurately and regularly track actual expenditure on monopoly activities against expenditure allowed for when setting prices for reporting to IPART and stakeholders
- reflects concerns expressed by PwC in its review of NOW's actual and forecast expenditure.[192]

In general terms, ring-fencing involves identifying and isolating an entity's activities, assets, costs and revenues of its monopoly operations from the rest of its operations. It can include the separation of financial accounts, physical and procedural internal divisions (known as Chinese Walls) to contain certain information and activities, protocols for the disclosure and exchange of information between internal entities, and the consistent application of rules for cost/revenue attribution and for an appropriate allocation of common or joint costs, including overheads.

[191] Minister Costa, Letter to James Cox dated 18 October 2010.
[192] For example at pages 7, 31 and 72 of the PwC Report.

We consider that NOW should develop:

- a clearly documented internal procedure for accurate identification of monopoly expenditures consistent with Clause 3 of the *Water Services Order*, which:
  - identifies the expenditures, by activity, that NOW defines as expenditure on monopoly services and why expenditures, by activity, are considered to be on monopoly services (rather than why non-monopoly expenditure is excluded from the regulated cost base). This means the onus is on NOW to show why expenditure should be considered to be monopoly expenditure, rather than merely calculate monopoly expenditure as the residual of total expenditure less identified non-monopoly expenditure.
  - identifies common or indirect costs allocated to monopoly services/expenditures, the rationale for this allocation and the process/methodology for allocation
  - is sufficient to enable external review of its robustness and organisational consistency and accuracy in application
  - is readily available for external review (eg, by IPART, its consultants, and other stakeholders) and to staff applying the procedure
  - has financial systems that distinguish the expenditure that is defined and identified as expenditure on monopoly services, consistent with the above-mentioned procedure, from any other expenditure
- financial systems capable of generating accurate and replicable annual reports of monopoly service expenditures (direct and allocated costs) by activity, consistent with the above-mentioned procedure.

13.2 Issues that NOW needs to address over the 2011 Determination period

During this price review, we have identified a range of issues relating 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 Determination 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) DNR's expenditures. Both these consultants identified significant deficiencies with the DNR'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 DNR'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 DNR address these deficiencies, and 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 DNR'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 Determination 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, while in other instances it is absent altogether.
- There is no documented evidence that levels of service have been 'stress tested' – eg, 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. 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 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 sets the maximum prices that a regulated entity can charge for its monopoly services. Under the IPART Act, these entities can only charge less than the maximum price if authorised by the NSW Treasurer.

In the course of this 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 billed some water users until many years after the charge have been incurred. For example, IPART has identified that potentially up to 5,515 users included in NOW's licence database with a listed entitlement of zero have not been charged the minimum bill.[193] Further, stakeholders provided examples of bills where usage charges were issued up to 3 years after the event.[194]

In its response to the Draft Report, NOW acknowledged past billing delays but suggested that, apart from domestic and stock licence holders and surveyed users on unregulated rivers, its billing has been up to date for 12 months to November 2010. Unregulated river surveyed users are town water and industry customers.[195] In relation to the 2 users groups that have experienced the most significant billing delays, we note:

[193] 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."

[194] For example, Wyong Shire Council.

[195] Minister Costa, Letter to James Cox dated 18 October 2010.

- NOW's proposal to bill stock and domestic licence holders from 1 July 2011 subject to Ministerial approval and consultation with users[196]
- the inclusion of a new charge designed to recover the costs of reading user owned meters should mitigate the need to undertake future surveys to calculate the usage components of town water and industry customers which NOW states have been so 'work intensive' as to result in the deferral of this activity over the 2006 Determination period.

In its response to the Draft Determination, NOW expressed the view that, while the Minister requires the Treasurer's approval to fix a charge lower than the price determined by IPART, the Minister does not require the Treasurer's approval to waive or reduce a charge. NOW has submitted that this Determination should not refer to the Minister requiring the Treasurer's consent to reduce or waive a charge.

NOW supports this position by citing the Minister's power in the Water Management Act to "waive or reduce fees and charges". In our view, the Minister's power is subject to the requirement in the IPART Act that the Treasurer's approval is obtained.

Our view remains that the Minister must obtain the Treasurer's approval before reducing or waiving charges where this results in those charges being less than the charges determined by IPART. However, given NOW's submission and the fact that any obligation arises under legislation (not the Determination) we have decided to revise the language in this Determination so that it reflects the language used in the IPART Act.

We consider that NOW needs to address this issue, 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

As discussed in Chapter 6, although stock and domestic (or 'basic') rights holders can extract water from the water sources NOW manages, they are not currently licensed and do not pay water management charges.

IPART considers that there is merit in NOW assessing 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.

[196] NOW, Response to IPART's Draft Determination, p 18.

In its response to the Draft Report, the NSW Irrigators Council[197] stresses that it will watch developments in this area closely to ensure that both NOW and IPART fulfil their respective responsibilities on this issue.

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-installed meters, we reached the view that NOW needs to provide better information to users and to IPART about how it will decide what type of meter will be installed where. NOW proposes to install 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 choose between the different meter types and costs.

Given this, as discussed in Chapter 10, we consider that there is a need for NOW to develop and publish its framework for deciding on meter types for various locations. Further, we consider that the decision-making framework should have due regard to the least cost to the water user.

We consider this framework is important for improving the transparency of this project and its objectives, and will assist NOW in managing customer disputes. Further, it will provide information essential to the next price review about the extent to which NOW has controlled pressures on its future operating costs and user prices. This will assist us in analysing the efficiency of the operating costs arising from this project in the next price review.

Undertaking cost benefit analysis of its policy goal of metering 95% of licensed extraction

As described in Chapter 12, IPART is concerned by the potential impacts for small users arising from NOW's design of its metering program. As part of this program, NOW has set itself the policy goal of metering 95% of licensed water extraction.

IPART's analysis suggests that, if the program is delivered to meet that goal, up to 2% of NOW's unregulated river and groundwater users may pay both the minimum bill for water management charges **and** the meter service charge relevant to government installed meters.

A key feature of NOW's proposed metering program is its internal goal of metering 95% of licensed entitlements. [198] Given the large numbers of unregulated river and groundwater users with small entitlements, it is unavoidable that this goal will result in the installation of a large number of meters and the imposition of meter service charges on small users. As the costs implications for users is significant, IPART

[197] NSW Irrigators Council submission, 1 December 2010, p 7.

[198] NOW advised that the objective of metering 95% of licensed extraction was an internal policy goal and not a condition required of the program's funding body or legislation (23 December 2010).

urges NOW to urgently undertake cost-benefit analysis of its goal to meter 95% of licensed entitlement and to make changes to the design of its metering program as warranted. The purpose of this study is to ensure that the benefits of metering 95% of licensed water extraction (as opposed to an alternative lower level) exceed the costs. It is recommended that the cost-benefit study report is shared with users and with IPART before the next price determination.

13.3 How we took these issues into account in making the 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 imposes considerable price increases in percentage terms, we carefully considered the outstanding concerns about NOW's systems and performance in making our decisions. This 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 decision to 'stop the clock' on this review and subsequently delay the determination start date until 1 July 2011 because of the provision of late and insufficient information by NOW. This decision has meant that the revenue that NOW would otherwise have collected from users has been reduced and that users have benefited from lower prices for 12 months.
- Deficiencies in NOW's justifications and explanations of its cost forecast, which was one factor considered in our decision to reduce NOW's proposed operating expenditure by 23.6% by 2014.

In response to the Draft Report, the Gwydir Valley Irrigators Association[199] sought confirmation that IPART will not allow a CPI increase on prices charged in 2010/11 and that prices from 1 July 2011 have not been calculated to allow NOW to recover revenue 'lost' due to delays in the price review. IPART confirms that the maximum prices that NOW can charge until the 2011 Determination commences are the prices determined in 2009/10 in nominal terms, under the 2006 Determination. Further we confirm that IPART's decisions for the 2011 Determination do not allow recovery of any shortfalls in revenue that it may experience in 2010/11.

[199] Gwydir Valley Irrigators Association submission, 30 November 2010, p 5.

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.[200] In previous price reviews, IPART had only allowed recovery of depreciation.

The establishment of a 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.

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.[201]

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.[202] 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.

---

[200] NOW's Excel Information Returns to IPART, adjusted for corrected capital expenditure of $2.66 million in 2010/11, December 2009.

[201] IPART, *Review of Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010 – Final Report*, September 2006, p 10.

[202] These are via written submissions from these parties, as well as their presentations at IPART's public hearings in July 2010.

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 2006 Determination have not been addressed. It is not acceptable that NOW's systems for ensuring transparency, control, and accountability of its expenditure are not sufficiently robust to support efficient pricing.

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 13.3 below.

Table 13.3 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, *Review of Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010 – Final Report*, September 2006, 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, 2(iii) 2(iv), 2(v), 2(vi) or 4. The subsequent report did not include complete information on 1, 2(iv), 2(vi) 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, 2(iv), 2(vi) 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), 2(vi) 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 2006 Determination period, to seek improvements in the timeliness and completeness of NOW's reports.[203] The NSWIC also wrote to IPART concerned about NOW's failure to provide timely reports.[204]

[203] Mr Jim Cox (IPART) correspondence to Mr Mark Duffy (DWE), 11 September 2008. Mr Jim Cox correspondence to Minister Costa, 19 February 2009.

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."[205]

Since the publication of the Draft Report, NOW has provided its 2009/10 Report which is available on IPART's website.

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 set out in this Final Report. In addition, as noted above, we have written to the Minister recommending that NOW be required to comply with reporting obligations. The Minister has confirmed that NOW will comply with the reporting framework.

In making our decision on the reporting framework, we considered NOW's proposal, PwC's review of this proposal, and stakeholder comments.

13.5.1 NOW's proposal

In its December 2009 submission, NOW proposed a large number of performance indicators and performance targets.[206] 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).[207]

---

[204] Mr Andrew Gregson (NSWIC) correspondence to Mr Colin Reid (IPART) 20 January 2009.
[205] NOW, response to PwC's Draft Report on its *Review of NSW Office of Water's water management expenditure*, 16 June 2010, p 18.
[206] See Appendix 1 of NOW's December 2009 submission.
[207] Correspondence from NOW to IPART, 23 February 2010.

13.5.2 PwC's review

The measures proposed by NOW were reviewed by PwC. PwC, who 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.[208]

PwC proposed an alternative set of performance indicators and output measures.[209] NOW has argued against these performance indicators, suggesting that they 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.[210]

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 in response to the Issues Paper:

- 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. LVW proposed an additional performance indicator that measures the speed of processing water consent transactions.[211]

---

[208] PwC's Final Report on its *Review of NSW Office of Water's water management expenditure*, 30 June 2010, p 151.
[209] Ibid, pp 148-151.
[210] NOW response to PwC's Draft Report on its *Review of NSW Office of Water's water management expenditure*, 16 June 2010, p 18.
[211] Lachlan Valley Water's proposed output measure has been included in PwC's Final Report.

- In contrast, other stakeholders, such as the NSW Irrigators Council, recommended retention and enforcement of the current reporting measures.[212] 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 6-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 Valley 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).

In response to the Draft Report, while some stakeholders remain of the view that NOW should improve its performance before increases in expenditure are allowed, a number of stakeholders expressed support for the proposed reporting framework.

13.5.4 IPART's considerations and conclusions

We carefully considered the content and scope of the annual reports and their ability 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 view 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 its key Monopoly Service Output Schedule. In addition, we expect NOW to provide an end of determination public report against the complete Monopoly Service Output Schedule contained at Appendix L of this Report. It creates a 'baseline' for assessing NOW's performance over the 2011 Determination period and the following determination period.

---

[212] For example, Mr Andrew Gregson, NSW Irrigators Council, at the Sydney public hearing, 23 July 2010.

The Monopoly Services Output Schedule sets out NOW's proposed monopoly service activities for the 2011 Determination period and the expected outcomes of these activities. 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.

NOW is expected to provide its annual public reports to IPART by the last working day of October of each year of the determination period and its end of determination period report together with its submission to the next price review. 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 an IPART review of pricing policies.[213] 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.[214] This provides some confidence that a mechanism could be designed and be effective.

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.[215] 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:

---

213 Section 24AA of the IPART Act sets out IPART's monitoring powers.

214 CEPA, *Review of IPART's approach to incentive based regulation*, October 2009.

215 Section 13A of the IPART Act sets out the circumstances in which a methodology can be adopted in place of setting maximum prices.

- 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[216] 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.

[216] 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 to the Issues Paper

This appendix provides a summary of NOW's December 2009 and subsequent submissions to IPART's Issues Paper. It does not summarise NOW's response to IPART's Draft Report and Determination. This can be found under submissions to the Draft Report on IPART's website.

B.1 Overview of NOW's submission

The key elements of NOW's December 2009 submission included 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. As an alternative, and "at a minimum", NOW's submission also presented prices for regulated rivers assuming a 70/30 split between 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, 1 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 in IPART's 2006 Determination).

- Changes to NOW's activity cost codes.
- Full cost recovery - NOW proposed 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, with bill increases of more than 300% for some valleys and customers. The proposed price increases were said to be driven by:
  - NOW's proposed move to full cost recovery in pricing.
  - NOW's stated need for additional FTEs, which increased 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 submission, December 2009, p 51.

Alternative cost and price scenarios

- **NOW's submission provided 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 proposed 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 proposed:**
  - **To incorporate new licence types into its access licence and works approval fee schedule** (including floodplain harvesting licences, licences 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 approximately 20% up to 150%.**

B.2 Water management expenditure over 2006/07 to 2009/10

NOW's submission suggested that, over the current determination period (2006/07 to 2009/10):

- 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.11 provides more information on NOW's operating and capital expenditures over the current determination period. 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.

PwC 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:

- Forecasted 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.

- Forecasted a significant increase in the natural resource management component of the NSW Government'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.
- Listed potential 'additional' costs (of about $10.5 million per year) associated with implementing the *Water Act 2007 (Cth)* (Commonwealth Water Act), in the event that the Commonwealth does not fund these additional costs. NOW noted 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.
- Foreshadowed its need to recover the operation and maintenance costs associated with the future installation of 2 significant metering programs (whose capital costs will be funded by the Commonwealth) at the 2011 price determination. (Although it states that these costs will have to be provided for in this determination if the determination period set by IPART is longer than 3 years).

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 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 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 argued that IPART's Determination should allow it to recover any 'additional' costs of implementing the Commonwealth 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 2011 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

Note: Total does not sum due to rounding.

Source: NOW submission, December 2009, p 45.

B.4 Regulatory framework for the 2011 Determination

B.4.1 Length of determination period

NOW requested a 3-year determination due to the uncertainties it faces with regard to Commonwealth involvement in the Murray-Darling Basin. NOW noted 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 Commonwealth projects can be determined.

NOW argued that a period less than 3 years would impose significant costs on it, while a longer determination period would require an adjustment mechanism for any significant changes in expenditures imposed by the Basin Plan in 2012.

Given NOW's proposed determination period, its submission provided forecast costs and prices only to 2012/13 (although its Excel information returns to IPART included forecasts to 2014/15).

Due to delays in this price review, the prices set in this Determination will take effect from 1 July 2011. NOW initially hoped 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 relevant issue was alignment with the end date of the State Water Determination. IPART has set State Water's prices for 4 years to 2013/14. After considering the issues (for NOW and other stakeholders) associated with commencement and end dates, we scheduled an end date of June 2014 for this Determination.

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 argued for a return on capital, but its submission did not provide its proposed opening value of the RAB 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 proposed a 7.9% real pre-tax WACC, and adopted the arguments made by State Water in its submission to IPART. State Water argued that it faces higher volatility relative to other metropolitan water agencies, and therefore should receive a higher return. State Water also argued 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 proposed 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 annual increases in bills. NOW argued for the removal of this cap on the following grounds:

- The cap is costly and time-consuming for NOW to administer. For example, NOW 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 2-part tariff to reduce their water use. For example, different usage from year to year can mean that, under the 2-part tariff, users receive a discount because their usage is higher in that year than the previous year. (At the same time, however, NOW's submission also proposed a move to fixed-only charges, and hence abolition of 2-part tariffs.)

B.4.4 Water management activities

In the Issues Paper, IPART flagged its intention to use the existing cost allocation ratios for each of the water management activities as the starting point for its Determination, as these have been developed and refined over 2 previous 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 proposed some changes to its activity cost codes. According to NOW, these changes were the result of:

- new services which have not been provided in the past
- activities that were not previously classified
- the amalgamation or deletion of some past activities to better reflect its current focus.

However, according to NOW, it was not proposing changes to the cost share ratios. NOW asserted that under its proposal the user share of activities have not been altered and, where activities codes have been merged, the weighted average of the users' share of the 2006 activities has been adopted. Appendix 4 of NOW's submission provided a matching of the old activity codes to each new activity. Notably, Appendix 4 omitted a new code proposed by NOW (C09-04 'overheads for water consent transactions') and included 2 new codes for which NOW has supplied no costs and sought no cost recovery (C03-2 and C03-03). For the purpose of IPART's analysis, the omitted code was included, while the new codes with no costs were excluded.

For the 2006 Determination, 60 activity codes were applied. Of these, 55 codes related to operating expenditure, 5 to capital expenditure, and 15 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 and 5 to capital expenditure, while 2 would have a zero cost share.

In the course of PwC's interviews with NOW, it was clear that the 2006 Determination's somewhat complex system of activity codes was not being utilised for internal management reporting and that budget forecasts and expenditure reports for the activities included some arbitrary allocations.

Preliminary analysis undertaken by IPART illustrates that in order 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
- the forecast expenditure for just 7 codes make up almost 60% of NOW's total expenditure,[217] with one code (C07-02 'operational planning') containing more than 10% of NOW's forecast operating costs.

IPART has decided to adopt NOW's cost codes, albeit with some modifications to correct errors made by NOW. In doing so, IPART has sought to achieve a balance

[217] 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'.

between providing transparency about the nature and purpose of expenditure, and improving the practicality of NOW's implementation and reporting.

B.4.5 Linking price and performance

In the course of the 2006 Determination, a key concern of stakeholders was the need to ensure that NOW is accountable for its expenditure and activities. In the 2006 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 its price-regulated water management activities) on more than one occasion. This suggests that there is a need for incentives and could be benefit in focusing on improvements in reporting requirements and/or other measures to improve service performance.

In its Issues Paper, IPART flagged that it would consider setting measures or performance indicators for NOW and would investigate options to strengthen the link between prices and performance. In its submission, NOW proposed a range of output/KPI measures. These are included in Appendix 1 of NOW's submission. However, NOW did not propose a mechanism to link these output/KPI measures to prices or other mechanisms to link price and performance. These measures were reviewed by PwC, who 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 NOW's future management costs and forecast expenditure priorities.

IPART's 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 can be clearly defined
- mechanisms used by other economic regulators.

We note that the Cambridge Economic Policy Associates (CEPA) report recently published by IPART includes examples of incentive regulation that were considered in IPART's deliberations on this issue. The CEPA 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 set by the regulator.

We have compiled a table of NOW's Monopoly Service Order outputs (see Appendix L) in order to determine whether NOW is delivering the services that it stated it would provide in its submission to the 2011 Determination.

B.5 Projected revenue to be recovered from users versus the broader community/Government

NOW proposed 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 submission, December 2009, p 48.

In the 2006 Determination, 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 IPART 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 the 2011 Determination, NOW proposed 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 Integrated Quantity and Quality Model (IQQM). At that time, IPART decided that, given deficiencies in metering data, IQQM data was more accurate than State Water's information on actual consumption/extraction.

Based on advice received from the Centre for International Economics (CIE) and in conjunction with State Water, NOW argued that consumption forecasts for regulated rivers should be based on the average of the extractions from the last 15 years. This was 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 Determination 2010, 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 continues to be the case.[218]

For the 2006 Determination, forecasts were based on entitlements. In its 2009 submission, NOW provided entitlement volumes for unregulated rivers and groundwater sources. It has not provided consumption forecasts for unregulated rivers and groundwater sources.

[218] Email, Chris Ribbons, NOW, 3 February 2009.

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 2-part (fixed and usage) tariff. Leaving aside major water utilities in the Hunter and Sydney, NOW reported that approximately 80% of unregulated river water entitlements are currently subject to a 1-part (fixed per entitlement) tariff. Including the major utilities in the Hunter and Sydney, this figure reduces to 42%.

NOW recognised, 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 NOW's submission and in the Excel information returns for 2 of the valleys
- a lack of explanation for changes between the entitlement data used in the 2006 Determination and that included in NOW's 2009 submission (eg, increases in entitlement in 5 valleys).

Accordingly, IPART sought further information from NOW.

In addition, both Hunter Water and the Sydney Catchment Authority submitted to IPART that the entitlement volumes reported by NOW for the major utilities should not be used for pricing purposes. We decided to charge these utilities based on these entitlement volumes in order to ensure consistency with other users.

Groundwater

For the 2006 Determination, information on metered groundwater extractions and IQQM data was not available, as a large number of licensees were unmetered and IQQM data was only available for a small number of groundwater sources. This remains the case.

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 provided entitlement volumes for groundwater sources.

NOW's submission noted that implementation of Water Sharing Plans (WSPs) for groundwater sources is continuing and that entitlements are progressively decreasing. It noted that to allow groundwater users time to adjust to reduced entitlements, supplementary entitlements have been granted in some systems. These supplementary entitlements will be phased out by June 2017.

Analysis by IPART of 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 WSP 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 noted that this change would 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 argued 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 WSPs and is 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 provided 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 proposed this pricing structure in the event that the Commonwealth does not fund the full cost of its reform requirements).

For each of these scenarios, NOW's submission presented 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.13.

The figures in section B.13 show that NOW proposed significant price increases – ie, increases of well over 100% over 2009/10 to 2012/13 for several valleys. Under NOW's proposal, prices increases would be 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.13 lists indications of the percentage increase in prices 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 would 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 acknowledged that the percentage increases proposed in its submission were extremely high. However, it argued that:

- Bulk water costs as a percentage of total farm costs are relatively small, representing between 0.8% and 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 the cropping system and region, $39 to $181 per ML for lucerne, $181 to $329 per ML for rice and $66 to $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. Customer profiles differ 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 2-part tariff structure. This raises 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 Meter service charges

In May 2009, the Commonwealth Government announced that it would provide funding for the installation of approximately 2,000 telemetry-enabled meters in the Hawkesbury-Nepean River, as part of the *Hawkesbury-Nepean River Recovery Program*. In addition, as part of its *Water for the Future* program, the Commonwealth Government has agreed, in principle, to provide up to $221 million for NSW to install new or upgraded meters across the Murray-Darling Basin. Of these funds, $131 million will be provided to NOW to install around 9,000 meters for groundwater and unregulated rivers, and the remaining $90 million to State Water for approximately 5,500 meters on regulated rivers.[219]

In response, NOW's December 2009 submission flagged a metering service charge to allow it to recover the operating and maintenance costs of the Commonwealth-funded meters and the additional costs of collecting and managing meter readings. Based on a study it commissioned, NOW estimated that:

- operating and maintenance costs for these meters would range from $262 to $835 per meter per year[220]
- average operating and maintenance costs would be $426 per meter per year, given the expected range of meters to be installed.

NOW's submission also noted the following:

- Under existing arrangements, meter readings are taken by State Water at many sites on regulated rivers, some unregulated rivers and some inland aquifers. The cost of this work is currently built into existing water management charges.
- The procurement process for the new meters will seek a 3 year warranty period at least. During this period, the meter supplier will be responsible for repairing any faults that occur as a result of component failure. After that, this will become part of the maintenance contract.

However, NOW's December 2009 submission did not propose that the Determination include a metering service charge. This was due to the timing of the meter roll-out program being undertaken and NOW's proposed 3-year Determination period (2010/11 to 2012/13). NOW's submission stated that:

> As the large Murray-Darling Basin metering project is not yet approved and not likely to be until the second half of 2010, and it will then take some time to implement, it is not expected that the costs of meter operation and maintenance from that project will arise within the proposed 3-year life of this determination. The much smaller Hawkesbury-Nepean metering project has been approved and commenced but the warranty should be sufficient to cover any maintenance costs within a 3-year determination period.

---

219 The source for these figures is NOW's original (December 2009) submission.

220 The higher costs are usually associated with sites where an electromagnetic meter and logger is installed, with telemetry capability being obtained through satellite technology.

Due to the timing of these projects, it is not proposed to include these metering costs in this determination, but rather foreshadow that they will need to be included in the next determination. However, these costs will need to be provided for if a longer determination period than 3 years is set by IPART.[221]

In May 2010, NOW proposed the following meter service charges ($09/10) for the 2011 Determination:

- **A 'full metering 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 operating and maintenance costs (which range from $230 to $696, depending on meter type) and the expected make up of the meter fleet. According to NOW, these operating and maintenance costs comprise:
  - meter reading (manual and remote)
  - meter maintenance (including annual visits, 2-yearly validation inspections to certify compliance with national water metering standards, repair of faults)
  - ongoing entry and management of metering data
  - 'dispute resolution'.
- **A 'reduced metering service charge' of $33 per annum in areas where there are currently meter reading activities (inland groundwater and Far West unregulated rivers)**. NOW has proposed this lower charge because it has included its cost of current meter reading activities[222] ($1.3 million)[223] in its general cost base to be recovered via water management charges, and as the new metering program is rolled out these existing activities will become redundant. According to NOW, the estimated number of meters to be installed in areas where the current meter reading activities are undertaken is 3,750 (3,500 in the 'inland' groundwater area and 250 for the Far West unregulated river areas). Therefore, NOW stated that its proposed metering service charge will need to be reduced by $346 per annum for these meters ($1.3 million/3,750 = $346) to offset the current metering costs in these areas.
- **A $306 per annum charge for validating the accuracy of a relocated meter**. According to NOW, Nayer Consulting[224] estimate that the best estimate of the cost of validating the accuracy of a relocated meter is $306 per meter, based on the range of meters to be installed by NOW.

---

221 NOW submission, December 2009, p 57.

222 State Water undertakes these activities, under contract with NOW.

223 NOW's supplementary submission states that these costs total $1.3 million. However, this figure appears to be $1.357 million in NOW's Excel information return, which includes expenditure in Far West unregulated river ($61,000), Murrumbidgee unregulated river ($8,000), Inland groundwater ($1.279 million) and Coastal groundwater ($10,000).

224 Nayar Consulting, *Assessment of Annual Operation and Maintenance Costs for the NSW – Hawkesbury Nepean and NSW Murray-Darling Basin - Metering Scheme*, August 2009.

NOW proposed that these meter servicing 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, NOW submitted that the metering 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.[225]

B.10 Transaction fees for water consents

As outlined below, NOW proposed significant increases to its fees for licence transactions, ranging from about 20% up to 150%. It also proposed to incorporate new licence types into its licence and approval schedule.

B.10.1 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 2006 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, 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.

[225] NOW Supplementary submission on metering charges, 4 May 2010, p 8.

Table B.4 Proposed water consent fees ($2009/10)

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, December 2009, p 86.

B.10.2 Incorporation of additional new types of licences

NOW proposed to add the following 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 WSP for the Great Artesian Basin was gazetted in 2008. It 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, and non-tradeable. When the bore is capped and piped, the conveyance licence will be cancelled.

These 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 will 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.11 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 2006 Determination period, NOW's expenditure on water management activities was:

- 6% greater on regulated rivers than the expenditure 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 noted 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 noted 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, but 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 WSPs, 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 2006 Determination period, NOW's submission stated 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 reported that actual capital expenditures exceeded its forecasts in the 2006 Determination by approximately $7 million, largely due to a stated variation of $7.3 million on groundwater monitoring over the 2006 Determination period. NOW stated that in reaching this conclusion it compared the forecasts provided in its submission to the 2006 Determination, rather than the "data information upon which the 2006 pricing determination was based."

However, this does not reconcile with IPART's records or its 2006 Final Report. Table B.6 compares actual capital expenditure to that allowed in the 2006 Determination, as per IPART's 2006 Final Report. That Report stated that it accepted NOW's forecast capital expenditure of approximately $9 million ($2006/07) over the 2006 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: NOW 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: NOW 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 2006 Determination 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 2006 Determination 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
Cth hydrometric network			2.00	2.00
NSW groundwater funding			0.30	0.37
NSW groundwater funding				0.71

Source: NOW submission to IPART review of bulk water prices, December 2009, pp 11-12.

B.12 NOW's forecast operating expenditure over the 2011 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 2006 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 FTEs. According to NOW, it currently has 256 FTEs undertaking water management activities, and will require an additional 47.5 FTEs by 2013 (thus increasing its FTEs engaged in water management by 18.6%).

NOW's submission outlined the activities that the additional 47.5 FTEs will be employed in (Section 5.3, pages 39 to 42). However, it did 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, PwC's expenditure review revealed that there is uncertainty over NOW's baseline figure of 256 FTEs. 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. PwC's report recommended a reduction of 23 FTEs, resulting in a baseline figure of 233 FTEs.

NOW's submission noted 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 its cost projections. This is the only reference to efficiency savings in NOW's submission.

Table B.9 NOW's forecast operating expenditure ($2009/10 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 (BDC) 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 remain unchanged. In 2009/10, $1.7m of MDBA water management costs were sought from water users, but for 2010/11 NOW proposed to pass on $6.5 million through water charges, with the balance of $11.6 million to be funded by the NSW Government. NOW suggested that these higher MDBA costs be recovered via NOW rather than have 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.13 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. 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.[226] 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 entitlement. 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 1-part tariff is greater than the entitlement charge under the 2-part tariff.)[227]

Table B.13 Tariffs on unregulated 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 replace 2-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 2-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 1 part (fixed charge only) tariff or is subject to the 2-part tariff and is consuming 100% of their entitlement.

---

226 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 2-part tariff (although NOW reports 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.

227 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 2-part tariff (although NOW reports 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.[228]

NOW's submission proposed 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)

	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.

228 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 2-part tariff (the same fixed charge + a usage charge).

C Cost shares adopted by IPART

Table C.1 Cost shares adopted by IPART for 2011 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 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 its 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 submission, December 2009

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.

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 three 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
	SUBTOTAL (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
	SUBTOTAL (UNREG.)	294	76.4%	2,245
Groundwater	GW Inland	0	0.0%	0
	GW Coastal	0	0.0%	0
	SUBTOTAL (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 2011 Determination will result 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%	64%	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 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 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 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 Determination.

F Consideration of Water Charge (Planning and Management Information) Rules 2010 arising from the Commonwealth Water Act

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. The ACCC has advised that IPART is not responsible for the publication of this information in accordance with these Rules. Our Final Report and the 2011 Determination contain much of this information and the table below indicates where it can be located in the 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 Report chapters 6,9 and Determination schedules 1 and 5
-charges for unregulated river water users	See Report chapters 6,9 and Determination schedules 2 and 5
-charges for groundwater users	See Report chapter 6 and Determination schedules 3 and 5
-metering service charges	See Report chapter 10 and Determination schedule 4
-consent transaction charges	See Report 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 Report chapter 9 and Determination schedules 1 and 4
-charges for unregulated river water users	See Report chapter 9 and Determination schedules 2 and 4
-charges for groundwater users	See Report chapter 9 and Determination schedules 3 and 4
-metering service charges	See Report chapter 10 and Determination schedule 4

Information to be published as set out in clause 5 of the Rules	Detailed information about the requirement – location in the Determination/Report
-consent transaction charges	See Report chapter 11 and Determination schedule 4
Legislative, contractual or other authority for the regulated charge	See Report 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 Report chapters 2-7
Class of persons by whom the regulated charge is payable:	
-charges for regulated river users	See Report chapter 9 and Determination schedule 1
-charges for unregulated river water users	See Report chapter 9 and Determination schedule 2
-charges for groundwater users	See Report chapter 9 and Determination schedule 3
-metering service charges	
-consent transaction charges	See Report chapter 10 and Determination schedule 4
	See Report chapter 11 and Determination schedule 4
Person to whom or agency to which the regulated charge is payable	See Report 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 Report chapter 10 and Determination schedule 4
-consent transaction charges	See Report 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 Report 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 Report chapter 9 and Determination schedules 1,2 and 3
A description of the water planning and water management activity or activities to which the	See Report chapters 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
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 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 Report 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 IPART Act 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):

a) the cost of providing the services concerned

b) the protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standard of services

c) the appropriate rate of return on public sector assets, including appropriate payment of dividends to the Government for the benefit of the people of New South Wales

d) the effect on general price inflation over the medium term

e) the need for greater efficiency in the supply of services so as to reduce costs for the benefit of consumers and taxpayers

f) the need to maintain ecologically sustainable development (within the meaning of section 6 of the *Protection of the Environment Administration Act 1991*) by appropriate pricing policies that take account of all the feasible options available to protect the environment

g) the impact on pricing policies of borrowing, capital and dividend requirements of the government agency concerned and, in particular, the impact of any need to renew or increase relevant assets

h) the impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body

i) the need to promote competition in the supply of the services concerned

j) considerations of demand management (including levels of demand) and least cost planning

k) the social impact of the determinations and recommendations

l) standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise).

Table G.1 outlines the sections of this 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	Chapters 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 appendices I and L The 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	Chapters 3,4,6 and 10 We have decided in this Determination to charge users a 2-part tariff 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 them 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	Chapters 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 required some form of response, together with how we addressed those comments in our Final 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 that 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 for 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 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)
Stakeholders are concerned that NOW's performance will not improve – they suggest that price increases should only be implemented once there is evidence of improvement	Several stakeholders have expressed concern with the price increases under the Draft Determination, in light of identified deficiencies with NOW's systems and performance. The Minister for Water has indicated that NOW will be required to address issues raised by IPART with regard to improving the financial administration of its regulated entities. IPART has emphasised the importance of NOW improving its performance in key areas, including public reporting, stakeholder consultation, asset management and capital planning, cost allocation and forecasting. IPART has also highlighted the likely relationship between improvements in these key areas and future assessments of efficient expenditure in its Report. (See section 3.5 and chapter 13). In addition, IPART has established a reporting framework to monitor performance for the 2011 Determination period that may also serve as a baseline for future price reviews.
One stakeholder raised the issue that regional water utilities are charged for extractions, but are not reimbursed for water that is returned to the river system	One of 10 outstanding operational policies that NOW has undertaken to deliver over the 2011 Determination period relates to Return Flow Credits. (See chapter 3)

Issue	IPART response
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 concern about the level of costs/prices allowed, given the information provided by NOW.	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)
Several stakeholders have argued that users should not fund the operating costs for the expansion of the hydrometric network/gauging stations, which are funded by the Federal Government. They argue that these costs provide little or no benefit to users and are primarily used for flood mitigation/management.	IPART has reviewed the user/Government cost share for the cost code that contains the operating costs for the expanded hydrometric network and gauging stations. IPART considers that the current cost shares apportioned to users for this activity are appropriate and reflect the 'impactor pays' approach. (See chapter 5)
Stakeholders acknowledge 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 concern with NOW's inadequate information against 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 indicating that such user contributions are efficient and consistent with the 'impactor pays principle'. (See chapter 5) In response to the Draft Report, a number of stakeholders have expressed support for this decision.
Stakeholders are concerned that NOW does not appropriately ring fence its monopoly service expenditures and that its capital planning and asset management processes need to be improved	We have recommended that NOW ring fence its monopoly service expenditures to the Minister for Water. Regarding asset management, 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. PwC also recommended that NOW 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. (See sections 4.3.3,13.4)
Stakeholders suggest that there is a	IPART accepts PwC's findings and some stakeholder views on NOW's inadequate planning, stakeholder consultation, and

Issue	IPART response
lack of planning and stakeholder consultation for NOW's capital programs	documentation of its capital programs. IPART has decided to exclude all of NOW's capital assets prior to 1 July 2011 from the RAB 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 RAB, 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 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.	IPART has balanced the need for NOW to recover its costs with stakeholders' concerns 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) In response to the Draft Report, NOW and some stakeholders have expressed support for the incorporation of the cap in modelled bills. Other continue to argue for a cap on actual bills.

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 (which result 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 cross-subsidisation between valleys and water types, we have had to balance this approach against 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 its approach of allocating costs to the valleys is reasonably 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 that transparency and accountability are enhanced. For groundwater sources, NOW does not have any reliable cost information on a valley basis from 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, WSP 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)
Some irrigators raise concerns that the size of the price increases they are experiencing in their valley/water source will have a significant impact on the competitiveness of farmers from these water sources/valleys.	We have set prices that reflect NOW's water resource management costs for different valleys and water sources. In addition, we have applied a 20% cap on modelled bills so that customers are not faced with excessive bill increases in any one year.
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)
Some stakeholders have requested that IPART require NOW to provide sufficient information on its costs and cost drivers, to enable both IPART and stakeholders to review and assess the suitability of these drivers over time.	IPART has reviewed the reporting measures published in the Final Report, to clarify the request that NOW report against each of its cost drivers/allocators. This is to ensure that NOW maintains its cost allocation methodology, that the numeric values of these drivers (eg, number of gauging stations per valley, entitlement per valley, etc) are transparent and readily available to stakeholders, and that these drivers are able to be reviewed and scrutinised by stakeholders over several years.
The MDBA argues against NOW's proposed allocation of MDBA costs across water sources and valleys, as	IPART considers that its decision on the allocation of MDBA costs across water sources and valleys is appropriate. The Determination allocates a proportion of MDBA costs to unregulated rivers and groundwater users, whereas the 2006 Determination allocated MDBA costs only to regulated rivers. The MDBA has acknowledged that some of its activities are

Issue	IPART response
used by IPART to set draft prices. The MDBA considers that the application of cost drivers to determine the percentage contribution by valley does not always produce results appropriate for the authority's contribution.	related to unregulated rivers and a very small component to groundwater. Under the 2011 Determination, NOW's MDBA costs are essentially allocated across valleys based on entitlement or extraction related entitlement – which is a similar method to the 2006 allocation method (long term average usage), except that it allows costs to be allocated across all 3 water types (regulated rivers, unregulated rivers and groundwater). (See section 7.5)
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 represents the best available information and is the key driver of NOW's costs (regardless of usage). (See chapter 8)
Concern about using entitlement volumes as a basis to set tariffs for major utilities	IPART has decided to use entitlement volumes as the basis for setting fixed charges, and considers that all users should be charged on the same basis. Large water utilities should be charged on the same basis as other water users. (See section 8.3)
Some stakeholders were opposed to the decision to transition towards groundwater prices into a coastal and inland area split. They proposed different methods of splitting groundwater prices.	IPART has decided to move to a coastal/inland split for groundwater prices in the 2011 Determination. We have accepted NOW's argument that groundwater aquifers do not align with surface water valleys and that it is not practicable to price by valley or WSP area at this stage. We have decided to gradually transition from valley-based groundwater prices to the inland and coastal 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. (See section 6.2)
Most stakeholders support consideration of the charging of basic rights holders in the future, although some argue prices should be set from 1 July 2011.	We have decided not to implement charges for basic rights holders in the 2011 Determination because they are not currently subject to water management charges and therefore have not participated in this review or had an opportunity to present their views. Additionally, 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). We note that 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

Issue	IPART response
	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. (See section 6.8)
Some irrigation corporations support the reinstatement of discounts for large users, as they claim their activities reduce NOW's costs in some areas.	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. (See section 6.7)
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)
Stakeholders have raised concerns about the combined impact of large bill increases for NOW, together with large increases in other bills such as State Water and electricity	We have considered the impact of the increases in NOW's bills on water users and recognise that there may be significant impacts on some users. However, the prices under the Determination represent the efficient costs of NOW's water management services which are essential to ensuring the integrity of property rights under the water entitlements system. We have examined the impact of NOW's prices as a proportion of farm cash costs per ML and concluded that the prices are reasonable and will not have unduly adverse effects on water users. (See chapter 12)
There is support for the retention of minimum bills – but debate as to whether the charge should be kept at $60 or increased up 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)

Issue	IPART response
Most stakeholders do not support the introduction of a meter service charge in the 2011 Determination period because of a lack of available information and because 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)
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 since 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 in the general operating expense base.	IPART has decided not to move away 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. Where NOW's costs are equal to its revenues it does not make a profit and there is no issue of surplus or deficit funds. Where NOW over-recovers significant levels of revenue, for example due to higher than forecast water usage, excess revenue goes 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 it 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	39,378	40,843	41,843	26%
IPART's target user share of costs (via prices)	29,099	33,944	36,925	39,189	35%
Difference between notional user share and target user share	3,980	5,434	3,918	2,655	-33%
NOW's forecast level of cost recovery under IPART's Determination	88%	86%	90%	94%	

Note: Totals may not add due to rounding.

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 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 the NSW Government. The table also shows that NOW's forecast level of cost recovery under the Determination will increase from 88% in 2009/10 to 94% in 2013/14.

Table I.2 Revenue requirement from NSW 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	27,395	26,688	29,042	68%
Difference between notional user share and target user share	3,980	5,434	3,918	2,655	-35%
Total Government contribution to the cost of NOW's monopoly activities	21,239	32,829	30,606	31,697	49%
% Government share of NOW's total efficient costs	42%	49%	45%	45%	

Note: Totals may not add due to rounding.

Chapter 5 explains the basis on which we have allocated 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 will increase from 42% to 45% over the 2011 Determination period.

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 Appendix L a schedule of NOW's Monopoly Service Order activities with outputs and performance levels that we expect will be achieved over the 2011 Determination period. 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 period.

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 Prices in $2010/11 by valley and source

Tables K1 to K9 below set out IPART's prices in $2010/11.

K.1.1 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 Prices for unregulated rivers (2010/11$)

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 1-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 Prices for groundwater ($2010/11)

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 and 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 WSP-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.
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.

Cost code	User share	% of user share revenue	Title	Detailed description and service output
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 and 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.
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 2011 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 and field/mobile sensors. Testing and calibration of hardware and software, sensor and instrument calibration and operation of technical workshops.

Cost code	User share	% of user share revenue	Title	Detailed description and service output
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 the 2011 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 WSP 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: ▾ WSP development and implementation ▾ Murray-Darling Basin Plan ▾ climate variability and climate change ▾ catchment change ▾ implementation of cap management strategy ▾ sustainable development projects ▾ threats to shared MDB resources ▾ environmental flow response modelling ▾ surface water – groundwater interaction.

Cost code	User share	% of user share revenue	Title	Detailed description and service output
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 WSP 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 ▾ WSP auditing ▾ Cross-border water trade - assessment of trading rules ▾ development of water modelling software and application to valley models ▾ eWater CRC (model development).

Cost code	User share	% of user share revenue	Title	Detailed description and service output
C05-04	100%	1.0%	Groundwater modelling	NOW will develop groundwater models capable of being used in the 2016 round of WSP 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 WSPs ▾ groundwater models for development of new WSPs ▾ 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 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

Cost code	User share	% of user share revenue	Title	Detailed description and service output
				▾ 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 and reporting	Nine regulated water sources will have a monitoring plan. 100% of regulated WSPs will have an ecological monitoring program in place. NOW will have 100% of high priority WSP areas with ecological performance monitoring implemented and reported. 100% of high priority unregulated river WSPs 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 5-year review by State Interagency Panel and 10-year review by NRC

Cost code	User share	% of user share revenue	Title	Detailed description and service output
				▾ ecological evaluation of plan performance including monitoring activities (eg, 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 (ie, reduced flushing flows), involving coordination of regional algal responses. Functions provided by regional algal coordinating committees (RACCs) and technical support to them, including: ▾ 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 WSPs by 2014. NOW will complete the water sharing planning process and its implementation by: ▾ completing the remaining 18 inland WSPs by 2013 ▾ completing the 20 remaining coastal valley WSPs by 2013 ▾ revising all existing WSPs for Murray-Darling Basin River resources by 2014 to enable 'accreditation' of existing plans with the Basin Plan

Cost code	User share	% of user share revenue	Title	Detailed description and service output
				▾ reviewing and remaking a total of 31 existing WSPs before 2014, prior to their 10 year expiry date. ▾ NOW's WSP development activities include: ▾ inter-agency 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.
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.

Cost code	User share	% of user share revenue	Title	Detailed description and service output
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 ▾ 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 (eg, licence application forms)

Cost code	User share	% of user share revenue	Title	Detailed description and service output
				▾ 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.
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.

Cost code	User share	% of user share revenue	Title	Detailed description and service output
C09-02	100%	3.2%	Licence conversion and entitlement specification	90% of access licences will be recorded on the public registers within 5 months of the implementation of the WSP. 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 licences audited being in compliance with licence requirements. It will increase its auditing level from 0.5% of total licences audited to 1% and will action 100% of breach reports up from the current level of 50%. 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.

Cost code	User share	% of user share revenue	Title	Detailed description and service output
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 licences 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 Weighted Average Cost of Capital (WACC)

The economic costs of NOW's services include the cost of capital of the assets employed in delivering those services. This represents the value that society could have obtained by using those assets and resources for other purposes.

There are several approaches to calculating 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 final 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.

In 2010 we concluded a review on a number of issues regarding our approach to setting the WACC.[163] This decision for NOW has been calculated according to the final decision on the WACC review. We commenced a further review to develop our approach to estimate the debt margin in November last year.[164] At this point, we have not yet released our final decision for this review. This decision therefore maintains our current approach to setting the debt margin, targeting a 10-year term and credit rating of BBB to BBB+. We have, however, introduced a minor modification whereby the sample of bonds used as a proxy for NOW's debt margin is updated to include Australian bonds on issue with a credit rating of BBB to BBB+ and at least 2 years remaining term to maturity. This is explained further in section M.3.2 below.

This appendix:

- provides an overview of our decision on the WACC for NOW
- summarises submissions from stakeholders in response to the draft decision
- details our approach to setting the WACC parameters.

[163] IPART, *IPART's weighted average cost of capital – Final Decision*, April 2010.
[164] IPART, *Developing the approach to estimating the debt margin – Discussion Paper*, November 2010.

M.1 Overview of IPART's decision on the WACC for NOW

Decision

22. Our decision is to use a real pre-tax WACC of 7.1% in estimating the economic cost of the services provided by NOW.

Our decision on WACC is to apply a real pre-tax WACC of 7.1%. This is the midpoint of the range of 5.7% to 8.6%. The parameter valuations adopted in this decision are detailed in Table M.1. Market-based parameters have been sampled over the 20-trading days to 6 December 2010 for the final decision.[165]

The WACC valuation has increased by 10 basis points from the draft to the final decision due to changes in market-based parameters. This increase has not affected prices because of the small size of the RAB.

Table M.1 Decision on the cost of capital and the parameters used to calculated the WACC

WACC Parameter	Draft decision	Final decision
Nominal risk free rate	5.2%	5.4%
Inflation adjustment	2.7%	2.9%
Market risk premium	5.5% - 6.5%	5.5% - 6.5%
Debt margin[a]	1.9% - 3.7%	1.6% - 4.1%
Debt to total assets (gearing)	60%	60%
Dividend imputation factor (gamma)	0.5 – 0.3	0.5 – 0.3
Tax rate	30%	30%
Equity beta	0.8 – 1.0	0.8 – 1.0
Cost of equity (nominal post tax)	9.6% - 11.7%	9.8% - 11.9%
Cost of debt (nominal pre-tax)	7.0% – 8.8%	7.0% - 9.6%
WACC range (real pre-tax)	5.8% – 8.2%	5.7% - 8.6%
WACC (real pre-tax) midpoint	**7.0%**	**7.1%**

a Includes debt raising costs of 12.5 basis points.

Source: Bloomberg, IPART analysis.

M.2 Stakeholder submissions

NOW did not respond to our draft WACC decision. Those stakeholders who did provide comment on the draft decision were opposed to the inclusion of a rate of return component in NOW's prices and made suggestions about the selection of a WACC value within the range.

165 Market-based parameters include the nominal risk free rate, inflation adjustment and the debt margin.

Some stakeholders, including the Gwydir Valley Irrigators Association and the Hunter Valley Water Users Association, argued that it was inappropriate for a Government department to earn a return, asserting that other departments including education and health do not seek a return.[166] Similarly, the New South Wales Irrigators' Council queried why a government department should 'charge its customers a return on the assets that it owns'.[167]

Western Murray Irrigation noted that we adopted the midpoint of the range of WACC values in our draft decision. It submitted that the appropriate decision would be to adopt a lower rate of return than the midpoint to recognise stakeholder opposition to the inclusion of a return in NOW's prices.[168]

We confirm our draft decision to include a rate of return in NOW's prices. Inclusion of the cost of capital ensures that shareholders receive appropriate compensation for committing capital to the business and bearing the risks associated with the business. This signals to consumers the value that society could have obtained by using those assets and resources for other purposes. It also ensures that efficient investment in capital will continue into the future to renew infrastructure and provide for growth.[169]

We have considered Western Murray Irrigation's proposal to adopt a point below the midpoint of the range of WACC values. However, our final decision adopts the midpoint value within the range. This is to ensure that the rate of return is commensurate with market conditions at the time of the decision and indicates the opportunity cost of capital invested in the business.

M.3 IPART's approach to setting the WACC parameters

M.3.1 Nominal risk free rate and inflation

Consistent with the approach of the draft decision, 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.

---

166 Gwydir Valley Irrigators Association, *Review of Prices for Water Administration Ministerial Corporation – Response to the IPART Draft Determination and Report*, November 2010, p 9; and Hunter Valley Water Users Association, *Re review of prices for Water Administration Ministerial Corporation - Comment on Draft Determination*, November 2010, p 1.

167 New South Wales Irrigators' Council, *Submission to IPART - NSW Office of Water (NOW) Price Determination from 1 July 2011 – Draft Decision,* December 2010, p 2.

168 Western Murray Irrigation, *Submission on Water Administration Ministerial Corporation Draft Determination to Independent Pricing and Regulatory Tribunal,* December 2010, p 2.

169 Treasury requires economic appraisal of new capital works, which involves an assessment of whether the project's internal rate of return is greater than the discount rate. See New South Wales Treasury, *Economic Appraisal Principles and Procedures Simplified* (TPP 07-6), July 2007, p 10.

Table M.2 Risk free rate and inflation adjustment

Parameter	Value
Nominal risk free rate	5.4%
Inflation adjustment	2.9%

Source: Bloomberg.

M.3.2 Debt margin

As noted above, we are currently reviewing our approach to setting debt margins. We have, in this Determination, maintained our current approach to estimating the debt margin based on yields on Australian securities with a targeted 10-year term to maturity and a BBB to BBB+ credit rating. We have, however, introduced a modification to sample all bonds in the Australian market that have a credit rating of BBB to BBB+ and at least 2 years remaining term to maturity and the Bloomberg BBB 7-year fair value yield curve. This has:

- added several bond issues that we consider to be suitable proxies for a regulated utility with a BBB to BBB+ credit rating
- removed the GPT bond from our sample as its credit rating was recently upgraded to A- by Standard and Poor's.

We consider that updating the sample has improved its quality, both in terms of number and relevance of observations, providing a better indication of the cost of debt for a regulated utility.

Table M.3 details the composition of this sample and the yields above the risk free rate over the 20-day period. Consistent with the draft decision, 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. The resulting range of the debt margin, including debt raising costs, is 1.6% to 4.1%.

Table M.3 Sample of securities and average yields to 6 December 2010

Security	Ticker	Average yield (basis points)
Wesfarmers	EH964875 Corp	156.90
APT	EI325336 Corp	296.66
Dexus	EI223256 Corp	291.93
Leighton	EH911249 Corp	346.97
Sydney Airport	EI308853 Corp	292.35
Mirvac	EI195249 Corp	268.40
Mirvac	EI414696 Corp	290.14
New Terminal Finance	EF641357 Corp	360.01
Snowy Hydro	EC870795 Corp	198.95
Santos	EF102609 Corp	147.40
Bloomberg BBB fair value curve (7 years)	C3567Y Index	402.02

Note: Excludes debt raising costs.
Source: Bloomberg.

M.3.3 Beta and gearing

Consistent with the approach of the draft decision, we consider it appropriate to adopt our standard level of gearing and equity beta for water businesses. We have concluded 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.3.4 Market risk premium, gamma and tax rate

We have maintained our draft position to adopt:

- a market risk premium of 5.5% to 6.5%
- a gamma value of 0.5 to 0.3
- a tax rate of 30%.

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 (WAL) 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 WALs which may be granted. These are described below.

Zero share

A zero share WAL 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 WAL through a permanent or temporary dealing.

Specific Purposes

There are 3 specific purpose WALs: domestic and stock, Aboriginal cultural and town water supply.

Domestic and stock

A WAL 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.

Aboriginal cultural

Aboriginal communities can apply for a WAL for cultural purposes such as manufacturing traditional artefacts, hunting, fishing, and gathering, or 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

It is expected that there will be 4 types of licences that can be issued at the direction of the Minister: controlled allocation, Great Artesian Basin (GAB) conveyance, floodplain harvesting and tidal pools. These are described below.

Controlled allocation

WALs 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 WAL 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 WAL 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 WAL 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, a licence is not required to take water from saline tidal pools. However, under the Water Management Act, WSPs extend to the tidal limit, and so 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 WAL dealings

WAL dealings under the Water Management Act include the trading of WALs, as well as any change to WALs 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 which 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 effects 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 WSPs have commenced. The WSPs 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 legislation to be considered includes:

- *Native Titles Act 1993 (Cth)*
- *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*
- 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 midpoint of the salary scales applicable for each function and applied the Crown Employees Award Rates that apply from 1 July 2010. To build up the costs we used a yearly hourly rate of 1826.6 hours, then applied a factor of 26.60% for on-costs (eg, superannuation, long service leave, payroll tax and workers' compensation). The applicable salary rates 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

O.1 Aggregate price increases

Price increases have been driven by the 26% increase in the user share of NOW's costs. In turn, NOW's costs are increasing to accommodate:

- the operation and maintenance of its expanded hydrometric network (which includes 128 new and 58 upgraded gauging stations)
- the operation and maintenance of its upgraded surface water databases
- 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
- 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.

O.2 Valley price increases

Price changes have been driven by:

- changes to the cost allocation methodology since the 2006 Determination
- updated entitlement figures, resulting in changes to fixed charges, and
- Revised usage forecasts, resulting in changes to usage charges.

Other factors that influence prices, and price variation between valleys, include IPART's decisions to:

- Set a 20% cap on forecast increases in annual bills for most users.
- Set the 2-part tariff for each valley so that 70% of forecast revenue for customers subject to a 2-part tariff comes from the fixed charge, and 30% is received via the usage charges. For some valleys, this represents a substantial change (relative to the 2006 Determination) and has affected the level of fixed and usage charges.
- Move to a higher level of cost recovery for some valleys.

O.3 Major drivers of the Cost Allocation System

IPART notes that the allocation of costs to valleys is largely driven by 5 factors:

- The entitlement volume.
- The number of licences.
- The number of gauging stations.
- The number of groundwater bores.
- Water sharing plans in place, in development, and the complexity of implementation of these plans.

O.4 Drivers of price changes for groundwater users

The move to 'inland' and 'coastal' regional pricing is a strong driver of price changes in all groundwater valleys. Price increases will vary by valley, depending on the prices that were set in the 2006 Determination. With the exception of Murrumbidgee, all users within a region, both inland and coastal, face the same charges by 2013/14.

The other major driver of changes in prices is IPART's draft decision to assume 100% usage for all groundwater users (apart from HWC and SCA). This has placed significant downward pressure on usage charges in both inland and coastal regions.

O.5 Rivers of price changes for specific valleys

O.5.1 Border

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $2.31 in 2009/10 to $2.99 in 2013/14 (an increase of 29%).
- Fixed charges rise from $1.40 in 2009/10 to $2.10 in 2013/14 (an increase of 49%).
- Usage charges fall from $1.63 in 2009/10 to $1.61 in 2013/14 (a decrease of 2%).

Key drivers of price changes (other than the increase in the user share of revenue):

- Usage charges have been significantly affected by a reduction in usage forecasts, and these charges have remained steady despite a reduction in the fixed-usage ratio.
  - The cost allocation system has reduced charges to be recovered from users, with a smaller proportion of NOW's costs being allocated to the Border regulated valley.
  - The bill cap has been applied in the first year of the determination, but does not reduce forecast bills for 2013/14.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $2.78 in 2009/10 to $4.81 in 2013/14 (an increase of 73%).
- Fixed charges rise from $1.68 in 2009/10 to $3.37 in 2013/14 (an increase of 101%).
- Usage charges rise from $1.10 in 2009/10 to $1.44 in 2013/14 (an increase of 31%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in a dramatic increase in the costs to be recovered from unregulated river licence holders in the Barwon.
- An increase in entitlement volumes has acted to reduce the increase in fixed charges, and an increase in usage forecasts has placed downward pressure on usage charges.
- The bill cap has been applied in all 3 years of the determination, reducing forecast bills for 2013/14 by 16%.

Groundwater

Prices and forecast bills:

- Forecast bills rise from $3.71 in 2009/10 to $6.27 in 2013/14 (an increase of 69%).

- Fixed charges rise from $2.47 in 2009/10 to $4.39 in 2013/14 (an increase of 77%).
- Usage charges rise from $1.24 in 2009/10 to $1.88 in 2013/14 (an increase of 52%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The single largest factor influencing prices in these valleys is the reduction in entitlement volumes. This has put enormous upward pressure on prices, as costs must be recovered from a smaller number of users.
- A large increase in forecast usage has acted to limit the increase in usage charges.
- The bill cap has been applied in the first year of the determination for all valleys except the Far West, and in the Barwon valleys (Border, Gwydir, Namoi, Peel) in the second year. However, the bill cap does not reduce forecast bills for 2013/14 , as full cost recovery is reached by this time.

O.5.2 Gwydir

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $1.21 in 2009/10 to $1.76 in 2013/14 (an increase of 45%).
- Fixed charges rise from $0.78 in 2009/10 to $1.23 in 2013/14 (an increase of 57%).
- Usage charges rise from $0.92 in 2009/10 to $1.13 in 2013/14 (an increase of 24%).

Key drivers of price changes (other than the increase in the user share of revenue):

- Usage charges have been affected by a reduction in usage forecasts, and these charges have increased despite a reduction in the fixed-usage ratio.
- The change in cost allocation methodology has slightly increased charges to be recovered from users, with a larger proportion of NOW's costs being allocated to the Gwydir regulated valley.
- The bill cap has been applied in the first year of the determination only, and does not reduce forecast bills for 2013/14.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $2.78 in 2009/10 to $4.81 in 2013/14 (an increase of 73%).
- Fixed charges rise from $1.68 in 2009/10 to $3.37 in 2013/14 (an increase of 101%).
- Usage charges rise from $1.10 in 2009/10 to $1.44 in 2013/14 (an increase of 31%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in a dramatic increase in the costs to be recovered from unregulated river licence holders in the Barwon.
- An increase in entitlement volumes has acted to reduce the increase in fixed charges, and an increase in usage forecasts has placed downward pressure on usage charges.

The bill cap has been applied in all 3 years of the determination, reducing forecast bills for 2013/14 by 16%.

Groundwater

Prices and forecast bills:

- Forecast bills rise from $3.71 in 2009/10 to $6.27 in 2013/14 (an increase of 69%).
- Fixed charges rise from $2.47 in 2009/10 to $4.39 in 2013/14 (an increase of 77%).
- Usage charges rise from $1.24 in 2009/10 to $1.88 in 2013/14 (an increase of 52%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The single largest factor influencing prices in these valleys is the reduction in entitlement volumes. This has put enormous upward pressure on prices, as costs must be recovered from a smaller number of users.
- A large increase in forecast usage has acted to limit the increase in usage charges.
- The bill cap has been applied in the first year of the determination for all valleys except the Far West, and in the Barwon valleys (Border, Gwydir, Namoi, Peel) in the second year. However, the bill cap does not reduce forecast bills for 2013/14, as full cost recovery is reached by this time.

O.5.3 Namoi

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $2.13 in 2009/10 to $3.55 in 2013/14 (an increase of 67%).
- Fixed charges rise from $1.21 in 2009/10 to $2.48 in 2013/14 (an increase of 104%).
- Usage charges rise from $1.46 in 2009/10 to $1.70 in 2013/14 (an increase of 17%).

Key drivers of price changes (other than the increase in the user share of revenue):

- Usage charges have been significantly affected by a reduction in usage forecasts, and these charges have increased despite a reduction in the fixed-usage ratio.
- The change in cost allocation methodology has slightly increased charges to be recovered from users, with a larger proportion of NOW's costs being allocated to the Namoi regulated valley.

- The bill cap has been applied in the first and second years of the determination, but does not reduce forecast bills for 2013/14.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $2.78 in 2009/10 to $4.81 in 2013/14 (an increase of 73%).
- Fixed charges rise from $1.68 in 2009/10 to $3.37 in 2013/14 (an increase of 101%).
- Usage charges rise from $1.10 in 2009/10 to $1.44 in 2013/14 (an increase of 31%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in a dramatic increase in the costs to be recovered from unregulated river licence holders in the Barwon.
- An increase in entitlement volumes has acted to reduce the increase in fixed charges, and an increase in usage forecasts has placed downward pressure on usage charges.

The bill cap has been applied in all 3 years of the determination, reducing forecast bills for 2013/14 by 16%.

Groundwater

Prices and forecast bills:

- Forecast bills rise from $3.71 in 2009/10 to $6.27 in 2013/14 (an increase of 69%).
- Fixed charges rise from $2.47 in 2009/10 to $4.39 in 2013/14 (an increase of 77%).
- Usage charges rise from $1.24 in 2009/10 to $1.88 in 2013/14 (an increase of 52%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The single largest factor influencing prices in these valleys is the reduction in entitlement volumes. This has put enormous upward pressure on prices, as costs must be recovered from a smaller number of users.
- A large increase in forecast usage has acted to limit the increase in usage charges.
- The bill cap has been applied in the first year of the determination for all valleys except the Far West, and in the Barwon valleys (Border, Gwydir, Namoi, Peel) in the second year. However, the bill cap does not reduce forecast bills for 2013/14, as full cost recovery is reached by this time.

O.5.4 Peel

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $1.74 in 2009/10 to $3.01 in 2013/14 (an increase of 73%).
- Fixed charges rise from $1.17 in 2009/10 to $2.11 in 2013/14 (an increase of 80%).
- Usage charges rise from $2.12 in 2009/10 to $3.34 in 2013/14 (an increase of 58%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has substantially increased charges to be recovered from users in the Peel.
- Usage charges have been marginally affected by a reduction in usage forecasts, and these charges have increased substantially, but mainly due to the increased costs to be recovered for the Peel.
- The bill cap has been applied in all 3 years of the determination, and reduces 2013/14 forecast bills by 34%. This has mitigated the impact on customers.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $2.78 in 2009/10 to $4.81 in 2013/14 (an increase of 73%).
- Fixed charges rise from $1.68 in 2009/10 to $3.37 in 2013/14 (an increase of 101%).
- Usage charges rise from $1.10 in 2009/10 to $1.44 in 2013/14 (an increase of 31%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in a dramatic increase in the costs to be recovered from unregulated river licence holders in the Barwon.
- An increase in entitlement volumes has acted to reduce the increase in fixed charges, and an increase in usage forecasts has placed downward pressure on usage charges.
- The bill cap has been applied in all 3 years of the determination, reducing forecast bills for 2013/14 by 16%.

Groundwater

Prices and forecast bills:

- Forecast bills rise from $3.71 in 2009/10 to $6.27 in 2013/14 (an increase of 69%).
- Fixed charges rise from $2.47 in 2009/10 to $4.39 in 2013/14 (an increase of 77%).
- Usage charges rise from $1.24 in 2009/10 to $1.88 in 2013/14 (an increase of 52%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The single largest factor influencing prices in these valleys is the reduction in entitlement volumes. This has put enormous upward pressure on prices, as costs must be recovered from a smaller number of users.
- A large increase in forecast usage has acted to limit the increase in usage charges.
- The bill cap has been applied in the first year of the determination for all valleys except the Far West, and in the Barwon valleys (Border, Gwydir, Namoi, Peel) in the second year. However, the bill cap does not reduce forecast bills for 2013/14, as full cost recovery is reached by this time.

O.5.5 Lachlan

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $1.39 in 2009/10 to $2.40 in 2013/14 (an increase of 73%).
- Fixed charges rise from $0.97 in 2009/10 to $1.68 in 2013/14 (an increase of 73%).
- Usage charges rise from $1.12 in 2009/10 to $1.93 in 2013/14 (an increase of 73%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has substantially increased charges to be recovered from users in the Lachlan regulated valley.
- Usage charges have been marginally affected by a reduction in usage forecasts. However, usage charges have mainly increased due to the increased costs to be recovered from the Lachlan.
- The bill cap has been applied in all 3 years of the determination, and reduces 2013/14 forecast bills by 8%. This has mitigated the impact of the rising prices on customers.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $4.95 in 2009/10 to $7.56 in 2013/14 (an increase of 53%).
- Fixed charges rise from $2.98 in 2009/10 to $5.30 in 2013/14 (an increase of 78%).
- Usage charges rise from $1.97 in 2009/10 to $2.27 in 2013/14 (an increase of 15%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in a substantial decrease in the costs to be recovered from unregulated river licence holders in the Central West.

- A decrease in entitlement volumes has led to a dramatic increase in fixed charges, and a decrease in forecast usage volumes has placed considerable upward pressure on usage charges.
- The bill cap has been applied in the first 2 years of the determination, but does not reduce forecast bills for 2013/14.

Groundwater

Prices and forecast bills:

- Forecast bills rise from $4.64 in 2009/10 to $6.27 in 2013/14 (an increase of 35%).
- Fixed charges rise from $3.06 in 2009/10 to $4.39 in 2013/14 (an increase of 44%).
- Usage charges rise from $1.58 in 2009/10 to $1.88 in 2013/14 (an increase of 19%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The single largest factor influencing prices in these valleys is the reduction in entitlement volumes. This has put enormous upward pressure on prices, as costs must be recovered from a smaller number of users.
- A large increase in forecast usage has acted to limit the increase in usage charges.
- The bill cap has been applied in the first year of the determination for all valleys except the Far West, and in the Barwon valleys (Border, Gwydir, Namoi, Peel) in the second year. However, the bill cap does not reduce forecast bills for 2013/14, as full cost recovery is reached by this time.

O.5.6 Macquarie

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $1.56 in 2009/10 to $2.55 in 2013/14 (an increase of 64%).
- Fixed charges rise from $0.97 in 2009/10 to $1.78 in 2013/14 (an increase of 84%).
- Usage charges rise from $1.31 in 2009/10 to $1.71 in 2013/14 (an increase of 30%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has substantially increased the costs that are to be recovered from users in the Macquarie regulated valley.
- Usage charges have been significantly affected by a reduction in usage forecasts. However, the majority of the increase in usage charges is due to the increased costs to be recovered from the Macquarie regulated valley.

- The bill cap has been applied in the first 2 years of the determination, but does not reduce 2013/14 forecast bills. The cap will help customers to transition to the increased charges.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $4.95 in 2009/10 to $7.56 in 2013/14 (an increase of 53%).
- Fixed charges rise from $2.98 in 2009/10 to $5.30 in 2013/14 (an increase of 78%).
- Usage charges rise from $1.97 in 2009/10 to $2.27 in 2013/14 (an increase of 15%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in a substantial decrease in the costs to be recovered from unregulated river licence holders in the Central West.
- A decrease in entitlement volumes has led to a dramatic increase in fixed charges, and a decrease in forecast usage volumes has placed considerable upward pressure on usage charges.
- The bill cap has been applied in the first 2 years of the determination, but does not reduce forecast bills for 2013/14.

Groundwater

Prices and forecast bills:

- Forecast bills rise from $4.64 in 2009/10 to $6.27 in 2013/14 (an increase of 35%).
- Fixed charges rise from $3.06 in 2009/10 to $4.39 in 2013/14 (an increase of 44%).
- Usage charges rise from $1.58 in 2009/10 to $1.88 in 2013/14 (an increase of 19%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The single largest factor influencing prices in these valleys is the reduction in entitlement volumes. This has put enormous upward pressure on prices, as costs must be recovered from a smaller number of users.
- A large increase in forecast usage has acted to limit the increase in usage charges.
- The bill cap has been applied in the first year of the determination for all valleys except the Far West, and in the Barwon valleys (Border, Gwydir, Namoi, Peel) in the second year. However, the bill cap does not reduce forecast bills for 2013/14, as full cost recovery is reached by this time.

O.5.7 Murray

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $1.63 in 2009/10 to $1.93 in 2013/14 (an increase of 19%).
- Fixed charges fall from $1.38 in 2009/10 to $1.35 in 2013/14 (a decrease of 2%).
- Usage charges rise from $0.38 in 2009/10 to $0.88 in 2013/14 (an increase of 134%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in a slight reduction in the costs to be recovered from users in the Murray regulated valley.
- The move to a 70:30 fixed to usage ratio has increased usage charges in the Murray regulated valley, as this ratio was 81:19 in 2009/10. Although this has increased usage charges, fixed charges have been reduced as a result of this change. This shift benefits users whose bills will be reduced in times of low rainfall.
- Usage charges have also been significantly affected by a reduction in usage forecasts, exacerbating the increase in these charges.
- The bill cap has not been applied to this valley.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $5.12 in 2009/10 to $8.72 in 2013/14 (an increase of 70%).
- Fixed charges rise from $3.08 in 2009/10 to $6.11 in 2013/14 (an increase of 98%).
- Usage charges rise from $2.04 in 2009/10 to $2.62 in 2013/14 (an increase of 28%).

Key drivers of price changes (other than the increase in the user share of revenue):

- Forecast bills are increasing mainly due to the low level of cost recovery achieved during the last determination (71% in 2009/10).
- An increase in forecast usage has acted to reduce usage charges (all else being equal).
- The change in cost allocation methodology has marginally increased the costs to be recovered from unregulated river licence holders in the Murray.
- A decrease in entitlement volumes has contributed marginally to the increase in fixed charges.
- The bill cap has been applied in the first 2 years of the determination, but does not reduce forecast bills for 2013/14.

Groundwater

Prices and forecast bills:

- Forecast bills rise from $3.95 in 2009/10 to $6.27 in 2013/14 (an increase of 59%).
- Fixed charges rise from $2.63 in 2009/10 to $4.39 in 2013/14 (an increase of 67%).
- Usage charges rise from $1.33 in 2009/10 to $1.88 in 2013/14 (an increase of 42%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The single largest factor influencing prices in these valleys is the reduction in entitlement volumes. This has put enormous upward pressure on prices, as costs must be recovered from a smaller number of users.
- A large increase in forecast usage has acted to limit the increase in usage charges.
- The bill cap has been applied in the first year of the determination for all valleys except the Far West, and in the Barwon valleys (Border, Gwydir, Namoi, Peel) in the second year. However, the bill cap does not reduce forecast bills for 2013/14, as full cost recovery is reached by this time.

O.5.8 Murrumbidgee

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $1.22 in 2009/10 to $1.58 in 2013/14 (an increase of 30%).
- Fixed charges rise from $1.04 in 2009/10 to $1.10 in 2013/14 (an increase of 6%).
- Usage charges rise from $0.27 in 2009/10 to $0.71 in 2013/14 (an increase of 167%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The share of costs allocated to the Murrumbidgee, the usage forecasts, and the entitlement volumes remain largely unchanged.
- The major drivers of price changes have been the increase in the user share of NOW's costs and the move to a 70:30 fixed to usage ratio. As this ratio was 85:15 in 2009/10, this has led to a significant increase in usage charges. The change in this ratio benefits users whose bills will be reduced in times of low rainfall.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $6.18 in 2009/10 to $10.69 in 2013/14 (an increase of 73%).
- Fixed charges rise from $3.71 in 2009/10 to $7.48 in 2013/14 (an increase of 102%).

- Usage charges rise from $2.47 in 2009/10 to $3.21 in 2013/14 (an increase of 30%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in an extremely large increase in the costs allocated to the Murrumbidgee.
- Decreased entitlement volumes have contributed to the considerable increases in fixed charges.
- A decrease in forecast usage has contributed to the increase in usage charges.
- The bill cap has been applied in the all 3 years of the determination, reducing forecast bills for 2013/14 by 35%. This has mitigated the impact of price increases on customers, with prices slowly transitioning to higher levels.

Groundwater

Prices and forecast bills:

- Forecast bills rise from $1.84 in 2009/10 to $3.19 in 2013/14 (an increase of 73%).
- Fixed charges rise from $1.24 in 2009/10 to $2.23 in 2013/14 (an increase of 80%).
- Usage charges rise from $0.61 in 2009/10 to $0.96 in 2013/14 (an increase of 57%).

Key drivers of price changes (other than the increase in the user share of revenue):

The drivers of price changes in Murrumbidgee are the same as for all other users in inland groundwater valleys. However, due to the low charges set for Murrumbidgee in the 2006 Determination, the bill cap has been applied in all 3 years of the determination. This has reduced forecast bills by 49% in 2013/14.

O.5.9 North Coast

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $3.17 in 2009/10 to $5.48 in 2013/14 (an increase of 73%).
- Fixed charges rise from $2.99 in 2009/10 to $5.04 in 2013/14 (an increase of 68%).
- Usage charges rise from $2.01 in 2009/10 to $4.99 in 2013/14 (an increase of 149%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has dramatically reduced the costs to be recovered from users in the North Coast valley. However, as this valley had an extremely low level of cost recovery during the previous determination, prices will still increase.

- Usage charges have been marginally affected by a reduction in usage forecasts, but the substantial increase over the course of the determination is due to the increased costs to be recovered.
- The bill cap has been applied in all 3 years of the determination, reducing forecast bills in 2013/14 by 19%.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $6.87 in 2009/10 to $9.02 in 2013/14 (an increase of 31%).
- Fixed charges rise from $4.14 in 2009/10 to $6.32 in 2013/14 (an increase of 53%).
- Usage charges fall from $2.73 in 2009/10 to $2.71 in 2013/14 (a decrease of 1%).

Key drivers of price changes (other than the increase in the user share of revenue):

- Forecast bills are increasing mainly due to the low level of cost recovery achieved during the last determination (68% in 2009/10).
- The change in cost allocation methodology has resulted in a slight reduction in the costs allocated to the North Coast unregulated valley. This has acted to limit the increase in forecast bills.
- A slight increase in entitlement volumes in the North Coast has placed downward pressure on fixed charges, and the upward revision of usage forecasts has also placed downward pressure on usage charges.
- The bill cap has not been applied to this valley.

Groundwater

Prices and forecast bills:

- Forecast bills fall from $6.82 in 2009/10 to $5.33 in 2013/14 (a decrease of 22%).
- Fixed charges fall from $4.55 in 2009/10 to $3.67 in 2013/14 (a decrease of 19%).
- Usage charges fall from $2.27 in 2009/10 to $1.67 in 2013/14 (a decrease of 27%).

Key drivers of price changes (other than the increase in the user share of revenue):

Coastal valleys have been allocated a substantially smaller proportion of costs as a result of the change in cost allocation methodology. In addition, increases in both entitlement volumes and usage forecasts have led to substantially lower fixed and usage charges, respectively.

As a result, the bill cap has not been to coastal valleys applied in any year of the determination. Groundwater licence holders in coastal valleys will see the largest reduction in their forecast bills of any group of users over the course of the determination.

O.5.10 Hunter

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $2.04 in 2009/10 to $3.52 in 2013/14 (an increase of 73%).
- Fixed charges rise from $1.23 in 2009/10 to $2.46 in 2013/14 (an increase of 101%).
- Usage charges rise from $1.21 in 2009/10 to $1.58 in 2013/14 (an increase of 30%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has dramatically increased the costs to be recovered from users in the Hunter valley.
- Usage charges, which increase substantially due to the large share of costs allocated to the valley, have been marginally reduced by an increase in forecast usage.
- The bill cap has been applied in all 3 years of the determination, reducing forecast bills in 2013/14 by 45%.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills fall from $4.57 in 2009/10 to $4.03 in 2013/14 (a decrease of 12%).
- Fixed charges fall from $2.75 in 2009/10 to $2.08 in 2013/14 (a decrease of 24%).
- Usage charges rise from $1.82 in 2009/10 to $1.96 in 2013/14 (an increase of 7%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The most significant influence on price changes in the Hunter unregulated valley has been the draft decision to charge HWC (and SCA) on the basis of their entitlement volume. This has resulted in a massive increase in total entitlement volumes for the valley, as HWC's entitlement volume has increased. This has led to a significant reduction in forecast bills (per ML of entitlement) in the Hunter valley.
- Forecast usage volumes have increased substantially. Usage charges only increase marginally, and are far lower than would have been the case had the 2006 Determination usage volumes been applied.
- The dramatic increase in the entitlement volume of the Hunter has increased the costs that have been allocated to this valley. However, the net effect of the increased entitlement is to reduce forecast bills substantially in the hunter.
- As forecast bills will fall in the Hunter the bill cap has not been applied. The Hunter will have the largest reduction in forecast bills of any unregulated valley.

Groundwater

Prices and forecast bills:

- Forecast bills fall from $6.82 in 2009/10 to $5.33 in 2013/14 (a decrease of 22%).
- Fixed charges fall from $4.55 in 2009/10 to $3.67 in 2013/14 (a decrease of 19%).
- Usage charges fall from $2.27 in 2009/10 to $1.67 in 2013/14 (a decrease of 27%).

Key drivers of price changes (other than the increase in the user share of revenue):

Coastal valleys have been allocated a substantially smaller proportion of costs as a result of the change in cost allocation methodology. In addition, increases in both entitlement volumes and usage forecasts have led to substantially lower fixed and usage charges, respectively.

As a result, the bill cap has not been to coastal valleys applied in any year of the determination. Groundwater licence holders in coastal valleys will see the largest reduction in their forecast bills of any group of users over the course of the determination.

O.5.11 South Coast

Regulated Rivers

Prices and forecast bills:

- Forecast bills rise from $3.73 in 2009/10 to $6.45 in 2013/14 (an increase of 73%).
- Fixed charges rise from $2.97 in 2009/10 to $4.51 in 2013/14 (an increase of 52%).
- Usage charges rise from $1.99 in 2009/10 to $5.05 in 2013/14 (an increase of 154%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in a slight increase in the costs to be recovered from users in the South Coast. However, price increases are substantial due to the low level of cost recovery achieved in the 2006 Determination.
- The bill cap has been applied in all 3 years of the determination, reducing forecast bills for 2013/14 by 16%.

Unregulated Rivers

Prices and forecast bills:

- Forecast bills fall from $3.59 in 2009/10 to $3.38 in 2013/14 (a decrease of 6%).
- Fixed charges fall from $2.15 in 2009/10 to $2.04 in 2013/14 (a decrease of 5%).

- Usage charges fall from $1.44 in 2009/10 to $1.34 in 2013/14 (a decrease of 7%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The most significant influence on price changes in the South Coast unregulated valley has been the draft decision to charge SCA (and HWC) on the basis of their entitlement volume. This has resulted in a massive increase in total entitlement volumes, as SCA's entitlement volume has effectively doubled. This has led to a significant reduction in forecast bills (per ML of entitlement) in the South Coast valley.
- Forecast usage volumes have increased substantially. Usage charges only increase marginally, and are far lower than would have been the case has the 2006 Determination usage forecasts been applied.
- The dramatic increase in the entitlement volume of the South Coast has increased the costs that have been allocated to this valley. However, the net effect of the increased entitlement is to reduce forecast bills substantially in the South Coast.
- As forecast bills will fall in the South Coast, the bill cap has not been applied. The South Coast is one of only 2 unregulated valleys where forecast bills are falling.

Groundwater

Prices and forecast bills:

- Forecast bills fall from $6.82 in 2009/10 to $5.33 in 2013/14 (a decrease of 22%).
- Fixed charges fall from $4.55 in 2009/10 to $3.67 in 2013/14 (a decrease of 19%).
- Usage charges fall from $2.27 in 2009/10 to $1.67 in 2013/14 (a decrease of 27%).

Key drivers of price changes (other than the increase in the user share of revenue):

Coastal valleys have been allocated a substantially smaller proportion of costs as a result of the change in cost allocation methodology. In addition, increases in both entitlement volumes and usage forecasts have led to substantially lower fixed and usage charges, respectively.

As a result, the bill cap has not been to coastal valleys applied in any year of the determination. Groundwater licence holders in coastal valleys will see the largest reduction in their forecast bills of any group of users over the course of the determination.

O.5.12 Far West

Unregulated Rivers

Prices and forecast bills:

- Forecast bills rise from $5.78 in 2009/10 to $6.01 in 2013/14 (an increase of 4%).

- Fixed charges rise from $3.51 in 2009/10 to $4.21 in 2013/14 (an increase of 20%).
- Usage charges fall from $2.26 in 2009/10 to $1.80 in 2013/14 (a decrease of 20%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The change in cost allocation methodology has resulted in a substantial decrease in the costs to be recovered from unregulated river licence holders in the Far West.
- A decrease in entitlement volumes has contributed to the increase in fixed charges.
- An increase in forecast usage volumes has resulted in a considerable reduction in usage charges.
- The bill cap has not been applied to this valley.

Groundwater

Prices and forecast bills:

- Forecast bills fall from $6.82 in 2009/10 to $6.27 in 2013/14 (a decrease of 8%).
- Fixed charges fall from $4.55 in 2009/10 to $4.39 in 2013/14 (a decrease of 4%).
- Usage charges fall from $2.27 in 2009/10 to $1.88 in 2013/14 (a decrease of 17%).

Key drivers of price changes (other than the increase in the user share of revenue):

- The single largest factor influencing prices in these valleys is the reduction in entitlement volumes. This has put enormous upward pressure on prices, as costs must be recovered from a smaller number of users.
- A large increase in forecast usage has acted to limit the increase in usage charges.
- The bill cap has been applied in the first year of the determination for all valleys except the Far West, and in the Barwon valleys (Border, Gwydir, Namoi, Peel) in the second year. However, the bill cap does not reduce forecast bills for 2013/14, as full cost recovery is reached by this time.

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