IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Review of prices for the Water Administration Ministerial Corporation

For DPI Water - from 1 July 2016

Water — Draft Report
March 2016

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Invitation for submissions

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

Submissions are due by 4 April 2016.

We would prefer to receive them electronically via our online submission form <www.ipart.nsw.gov.au/Home/Consumer_Information/Lodge_a_submission>.

You can also send comments by mail to:

Review of prices for the Water Administration Ministerial Corporation
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If you would like further information on making a submission, IPART's submission policy is available on our website.

Contents

1 Executive summary

1.1 Introduction

The Independent Pricing and Regulatory Tribunal of NSW (IPART) is determining the maximum prices for the monopoly water management services that DPI Water currently delivers on behalf of the Water Administration Ministerial Corporation (WAMC).[1]

These services include ensuring available water is shared according to the agreed water sharing rules, that the integrity of water rights are protected, and water resources are managed sustainably. DPI Water submitted a proposal for WAMC's prices in September 2015.

On 9 February 2016, DPI Water provided IPART with a notification that corrects errors it identified in its submission. The notification provided revised prices which replace the prices in DPI Water's original submission. On 11 February, we published DPI Water's notification on our website as an erratum to its pricing proposal. In this report we use the revised prices as the basis of comparison.

This Draft Report sets out our draft decisions on WAMC's (for simplicity, referred to as DPI Water's) maximum prices over the **4-year period** from 1 July 2016 to 30 June 2020 (the 2016 determination period).

We outline how these draft prices will affect water licence holders across the state and the rationale and analysis that underpin our draft decisions.

We are seeking submissions from stakeholders on the Draft Report and Draft Determination. We will consider these submissions before making our Determination in June 2016. Details on how to make a submission are provided on page iii at the front of this report. The closing date for submissions is **4 April 2016**.

[1] The Water Administration Ministerial Corporation is the statutory body under the *Water Management Act 2000* (NSW) responsible for water management in New South Wales. Its water planning and management activities are delivered by the DPI Water.

We last set prices for the period 1 July 2011 for three years (the 2011 Determination).[2] The commencement of this review was deferred by two years following two separate requests from DPI Water.

There are three categories of prices that we set in this review:

- **Water management prices** – annual prices which recover the costs of water planning and management and apply to all categories of water access licences. These prices include entitlement and water take prices, and a minimum annual charge.
- **Consent transaction charges** – which recover the costs of one-off services such as amending water access licenses, performing water allocation assignments and issuing works approvals.
- **Meter service and reading charges** – annual charges for maintaining and reading water meters.

Unless otherwise stated, the dollar figures in this Draft Report are in $2015-16.

The sections below summarise our key decisions or determinants of prices, list the draft prices, and outline the structure of this Draft Report. We conclude this chapter by listing our key draft decisions.

1.2 Summary of our draft decisions that affect water management prices

Overview of our draft decisions

We have set DPI Water's water management prices for 26 different water sources across three water types:

- regulated rivers (11 valleys)
- unregulated rivers (12 valleys), and
- groundwater (3 areas).

We have set DPI Water's total efficient costs (or **notional revenue requirement**) below that proposed by DPI Water, which in turn is below that allowed in the 2011 Determination.

For the 2016 determination period, DPI Water proposed to reduce the user share of costs by around $1.4 million a year compared to that allowed in the 2011 Determination. We are proposing further reductions to the revenue DPI Water can recover from water users. Under our Draft Determination, the expected average annual revenue that DPI Water would recover from water users is $41.5 million over the next four years, which is $3.8 million less than that DPI proposed.

[2] IPART, *Review of prices for the Water Administration Ministerial Corporation – Determination and Final Report*, February 2011.

In general, this would result in lower prices and lower typical bills at the end of the 2016 determination period, 2019-20, compared with the current year 2015-16, excluding the effects of inflation.

We have decided to accept DPI Water's proposed revised **cost allocation model,** which relies more heavily on water take forecasts to allocate costs across water sources. Under this approach, water sources or valleys with relatively low water take are allocated a smaller share of costs. The new cost allocation model has resulted in a shift of costs from unregulated rivers and groundwater to regulated rivers. Within regulated rivers, costs shift from valleys with low water take to valleys with high water take. Essentially, water sources with higher levels of water use are now bearing a higher share of water management costs.

As a result of our decisions on the user share of DPI Water's costs and the allocation of these costs across water sources, unregulated rivers and groundwater experience the largest decrease in prices and bills. Some valleys in regulated rivers with relatively low water take would also see a reduction in prices and typical bills.

There are four valleys in regulated rivers (Gwydir, Peel, Murrumbidgee and Hunter) where prices are still below the level necessary to achieve cost recovery. In these valleys prices are set on a **glide path** towards full cost recovery.

Similarly, the Murrumbidgee groundwater source is below cost recovery, and prices have been set on a glide path to cost recovery.

We have also decided to increase the **minimum annual charge** (MAC) above the level proposed by DPI Water ($150). Our draft decision is to make the MAC more cost-reflective, increasing it from its current level of $105 to $150 in 2016-17, and then transitioning it to $200 per year by 2019-20. This would mean a number of smaller users would face an increase in their bill, with the number of customers on the MAC also increasing.

We have made a draft decision to specify a separate set of prices for four valleys in regulated rivers and one valley in unregulated rivers if floodplain harvesting (FPH) licences are introduced. Water take prices will reduce for all licence holders in the valley following any introduction of FPH licences by the Minister administering the Water Management Act.

We have also made a draft decision to set a separate price for WaterNSW in South Coast unregulated rivers, to recover the user share of DPI Water's efficient costs of the Metropolitan Water Plan (MWP). We have, however, excluded 25% of DPI Water's metropolitan water planning costs on the basis that they are not for monopoly services.

Overall, we consider that our draft prices will not have an adverse impact on farm businesses. Under our draft prices and including the effects of inflation, the typical bill is forecast to decrease for 17 of the 26 water sources. For the remaining nine water sources, four would increase by less than the rate of inflation,[3] and five would increase by around 19% to 24% over the period 2015-16 to 2019-20 (including the effects of inflation).[4] The increase for these five water sources is a result of our decision to transition their prices towards full cost recovery (noting prices in these water sources are currently not fully recovering the user share of DPI Water's costs).

The sections below discuss our key decisions or determinants of prices in more detail.

Most prices will decrease in real terms

Prices and bills paid by most water users will decrease in 2016-17 when compared to current (2015-16) levels.

We set annual water management prices across 26 different water sources:

- 11 valleys in regulated rivers
- 12 valleys in unregulated rivers, and
- 3 pricing regions in groundwater – inland and coastal, plus:
  - a separate price for Murrumbidgee groundwater users within the inland groundwater source, which is substantially below full cost recovery, and on a glide path to the inland price.

Of these water management prices, 43 prices will be lower in real terms in the last year of our Determination, 2019-20, than current 2015-16 prices. Of the 25 prices that are higher, many are a result of increases in water take prices that occur in tandem with corresponding decreases in entitlement prices for unregulated sources on a 2-part tariff.

There are five water sources that will be below full cost recovery levels in 2016-17. These water sources face price increases over the 2016 determination period, as they transition towards full cost recovery.

We have also established one new specific price for WaterNSW in the South Coast unregulated river water source.

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3 This includes the Border, Namoi and Murray regulated water sources, and the Far West unregulated water source.

4 This includes the Gwydir, Peel, Murrumbidgee and Hunter regulated water sources, and the Murrumbidgee groundwater source.

Prices are generally going down as we have reduced the notional revenue requirement (NRR)

The main driver of the reduction in prices is our decision to reduce DPI Water's operating expenditure allowance and the amount allowed for capital expenditure. We have also excluded the costs of some proposed activities associated with urban water planning activities of the Metropolitan Water Directorate, as they are not monopoly services.

We have also reduced DPI Water's proposed allowance for Murray-Darling Basin Authority (MDBA) costs by $1.2 million (or 3.2%) over the 2016 determination period. We remain concerned about the lack of information on MDBA expenditure and note stakeholder concerns on the transparency and efficiency of these contributions.[5] Any expectation that users should contribute to these costs through water management prices should be matched by an appropriate level of transparency and scrutiny.

DPI Water's proposed notional revenue requirement (NRR) over the 4-year determination period was $20.2 million, or 8.1%, higher than our allowed NRR. Our reduction in DPI Water's NRR is driven by:

- a $20.1 million reduction to operating expenditure over the 4-year determination period, including:
  - $2.1 million of activities considered as out-of-scope of monopoly services, and
  - $18.1 million efficiency adjustment to various activities including water planning costs[6]
- a $1.2 million reduction to the allowance that can be recovered from users for MDBA expenditure, and
- a $1.9 million reduction to capital expenditure, which affects the return on and return of the Regulatory Asset Base (RAB).

Some of this reduction is offset by an increase in the post-tax Weighted Average Cost of Capital (WACC) from 4.6% (DPI Water's proposal) to 4.8% (IPART's draft decision), providing a tax allowance and adjusting the assumptions related to working capital.

Our draft decisions sees DPI Water's notional revenue requirement (NRR) for its monopoly water management services over **the four years of the 2016 determination period total $229.94 million, an average of $57.49 million a year**.

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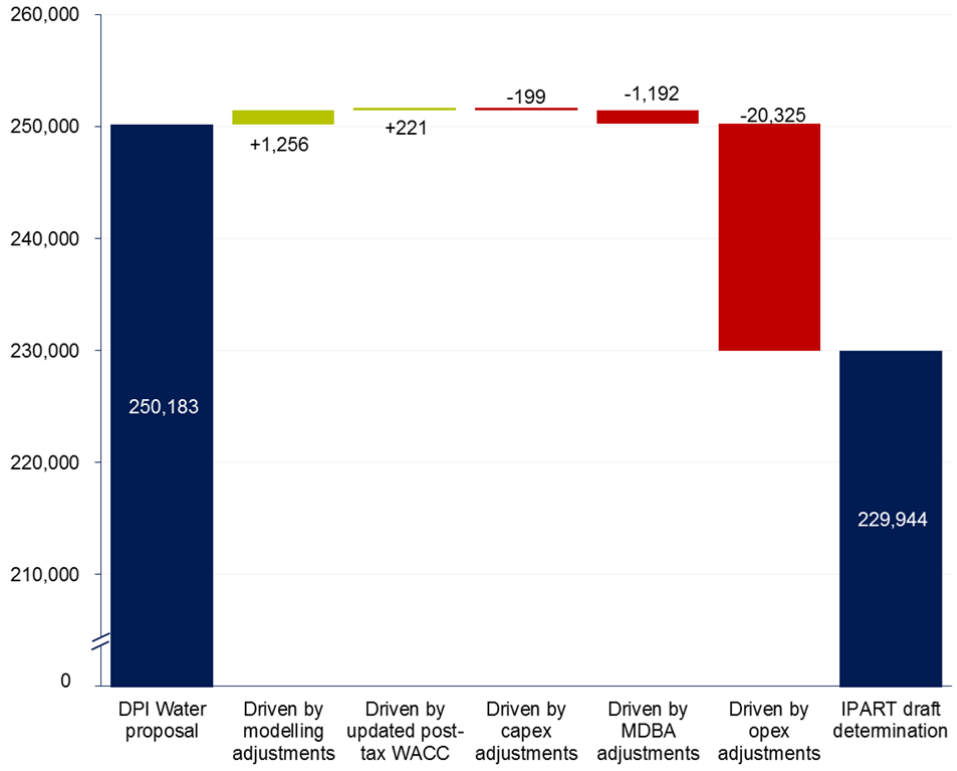
5 Gwydir Valley Irrigators Association submission to IPART Issues Paper on Review of prices for the WAMC, October 2015, p 5; Murray Irrigation Limited submission to PART Issues Paper on Review of prices for the WAMC, 2016, October 2015, p 2; NSW Irrigators' Council submission to IPART Issues Paper on Review of prices for the WAMC, October 2015, p 13.

6 Numbers might not add up due to rounding.

A summary of our adjustments to DPI Water's notional revenue requirement is presented in Figure 1.1 below.

Figure 1.1 Summary of IPART's draft adjustments to DPI Water's notional revenue requirement (2016-17 to 2019-20) ($'000, $2015-16)



Source: IPART Calculations. Bar size is not to scale.

The user share of costs is $166.1 million over the 4-year period (72% of total NRR)

Once we established DPI Water's notional revenue requirement, we assessed the appropriate share of total costs (or NRR) to be recovered from water licence holders (**the user share**) via water management prices. The remaining share of costs are attributed to the Government (on behalf of the broader community). In doing so, we applied the **impactor pays principle**.

Under our draft decision, the **user share of total efficient costs over the 4-year determination period is $166.1 million or 72%**.

The remaining $63.9 million, or 28% of DPI Water's total efficient costs, is the share funded by the NSW Government (on behalf of the broader community).

The average annual user share of NRR has dropped from $46.76 million over the 2011 determination period to $41.52 million over the 2016 determination period. This is a $5.25 million, or 11%, decrease in costs to be recovered from users annually.

We have moved to using water take to allocate costs to water sources

We allocated the user share of costs across the 11 regulated river valleys, 12 unregulated valleys and 3 groundwater regions.

In doing so, we accepted DPI Water's proposed change in cost drivers (or allocators). This involved a move away from entitlement volumes to water take volumes as a key means of allocating costs across water sources.

This decision has resulted in some shift of NRR to regulated rivers from unregulated and groundwater water sources (see Table 1.1).

Table 1.1 Summary of user share of NRR ($2015-16, million)

	Average Annual 2011 Determination	Draft Average Annual 2016 Determination	Change	% Change
Regulated Rivers	19.17	18.18	-0.98	-5%
Unregulated Rivers	14.86	13.10	-1.76	-12%
Groundwater	12.74	10.23	-2.51	-20%
Total	**46.76**	**41.52**	**-5.25**	**-11%**

Source: IPART Calculations.

We have largely maintained price structures

We have generally maintained the geographic split of prices for regulated and unregulated sources, and an inland/coastal division for groundwater sources.

We have also maintained the current structure of 1-part and 2-part tariffs, including the 70:30 ratio of revenue recovered from fixed (entitlement) and usage (water take) charges under the 2-part tariff.

Under our draft decisions, however, the minimum annual charge (MAC) will increase from the current level of $105.34 to $200 per year by 2019-20.

Typical bills will generally decline

Under our draft decision, the typical 2-part tariff bill for most water sources will decline, and to a greater extent than under DPI Water's proposal. The exception is those water sources that are below full cost recovery, such as the Gwydir, Peel, Hunter and Murrumbidgee regulated valleys and the Murrumbidgee sub-area of Inland groundwater.

Our analysis shows that in the last year of the 2016 determination period, the typical bill will be lower for 17 of the 26 water sources, compared with 2015-16 prices, including the effects of inflation.

The bill for those on the MAC will increase – as outlined above. The increase in the MAC will also increase the number of licences subject to the MAC, from an estimated 16,236 in 2015-16 to 22,205 licences by 2019-20.

Levels of cost recovery will increase

Under our draft decisions, DPI Water's level of cost recovery will increase. DPI Water will recover 97% of the user share of its NRR over the 2016 determination period. This compares to 94% of cost recovery in 2013-14 under our 2011 Determination.

The difference between forecast revenue from prices ('target revenue') and DPI Water's total user share costs (funded by the Government in effect as a community service obligation) is $5.2 million over the 4-year determination period.

The impact of our draft prices on each water source's level of cost recovery is outlined in Chapter 13.

1.3 Draft maximum water management prices

Our draft water management prices for regulated rivers, unregulated prices and groundwater sources are listed below. We have also established an alternative set of prices for some water sources, in the event that floodplain harvesting (FPH) is implemented within the 2016 determination period. These with FPH prices are listed and presented in Chapter 10.

Key drivers of the water management prices below include our following draft decisions:

- **The reduction in DPI Water's NRR** (or efficient costs), based on our assessment of its efficient costs (drawing on the findings of our expenditure consultant, Synergies).

- **The move away from entitlement towards water take as a key allocator** of DPI Water's user share of costs across water sources:
  - This resulted in a shift of costs away from unregulated and groundwater sources, towards regulated rivers.
- **Updated and improved water take forecasts for unregulated rivers and groundwater sources.**
  - Relative to the assumptions of the 2011 Determination, this has resulted in a reduction in water take forecasts, which (for a given level of cost) has increased water take prices. We note, however, that these increased water take prices are generally offset by a reduction in entitlement prices.
- **The transition of water sources below cost recovery levels towards full cost recovery at a faster rate than proposed by DPI Water**.

1.3.1 Regulated rivers

Regulated river entitlement and water take prices

Draft entitlement prices for regulated rivers are shown Table 1.2. The percentage change in prices between 2015-16 to 2019-20 is outlined for both IPART draft prices and prices proposed by DPI Water.

Table 1.2 Regulated river prices – fixed component of 2-part tariff ($2015-16)

Regulated rivers	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	2.32	2.14	2.14	2.14	2.14	-8%	5%
Gwydir	1.37	1.39	1.44	1.48	1.52	11%	10%
Namoi	2.75	2.57	2.57	2.57	2.57	-7%	5%
Peel	2.33	2.26	2.34	2.42	2.50	7%	4%
Lachlan	1.86	1.35	1.35	1.35	1.35	-28%	-16%
Macquarie	1.98	1.60	1.60	1.60	1.60	-19%	-12%
Murray	1.50	1.45	1.45	1.45	1.45	-4%	5%
Murrumbidgee	1.23	1.22	1.26	1.29	1.32	8%	7%
North Coast	5.58	3.71	3.71	3.71	3.71	-33%	-28%
Hunter	2.73	2.69	2.77	2.85	2.92	7%	6%
South Coast	5.00	3.14	3.14	3.14	3.14	-37%	-31%

Water take prices are shown in Table 1.3.

Table 1.3 Regulated rivers prices - water take component of 2-part tariff and water take only licences ($2015-16)

Regulated rivers	Draft Price ($/ML of water take)					Change from 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	1.79	1.67	1.67	1.67	1.67	-7%	6%
Gwydir	1.26	1.20	1.24	1.27	1.31	4%	2%
Namoi	1.88	1.73	1.73	1.73	1.73	-8%	3%
Peel	3.71	4.01	4.16	4.31	4.45	20%	17%
Lachlan	2.14	1.80	1.80	1.80	1.80	-16%	-2%
Macquarie	1.90	1.73	1.73	1.73	1.73	-9%	-1%
Murray	0.97	1.03	1.03	1.03	1.03	7%	15%
Murrumbidgee	0.79	0.81	0.83	0.85	0.88	11%	10%
North Coast	5.54	5.73	5.73	5.73	5.73	3%	7%
Hunter	1.75	1.84	1.89	1.94	2.00	14%	13%
South Coast	5.61	4.98	4.98	4.98	4.98	-11%	-3%

1.3.2 Unregulated rivers

Unregulated river: entitlement and water take component of 2-part tariff

Draft entitlement prices for unregulated rivers are shown Table 1.4. Under our draft prices, all unregulated water sources on a 2-part tariff will experience considerable decreases in entitlement prices over the period from 2015-16 to 2019-20.

Table 1.4 Unregulated river prices - fixed component of 2-part tariff ($2015-16)

Unregulated rivers	Draft Price ($/ML of entitlement)					Change from 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	3.73	2.16	2.16	2.16	2.16	-42%	-39%
Gwydir	3.73	2.16	2.16	2.16	2.16	-42%	-39%
Namoi	3.73	2.16	2.16	2.16	2.16	-42%	-39%
Peel	3.73	2.16	2.16	2.16	2.16	-42%	-39%
Lachlan	5.87	2.52	2.52	2.52	2.52	-57%	-55%
Macquarie	5.87	2.52	2.52	2.52	2.52	-57%	-55%
Far West	4.67	3.87	3.87	3.87	3.87	-17%	-10%
Murray	6.77	2.48	2.48	2.48	2.48	-63%	-61%
Murrumbidgee	8.30	3.06	3.06	3.06	3.06	-63%	-61%
North Coast	7.00	4.29	4.29	4.29	4.29	-39%	-34%
Hunter	2.30	1.21	1.21	1.21	1.21	-47%	-41%
South Coast[a]	2.26	1.64	1.64	1.64	1.64	-27%	0%

[a] WaterNSW unregulated licences are subject to special charge to reflect the MWP costs.

Water take prices are increasing in all unregulated water sources except the Hunter and South Coast, which experience slight decreases over 2015-16 to 2019-20 (see Table 1.5). The highest water take price increases occur in the Murrumbidgee and North Coast, with increases of 53% and 54% respectively.

These **increases in water take prices** occur in tandem with corresponding **decreases in entitlement prices** for unregulated sources on a 2-part tariff.

Table 1.5 Unregulated river prices - water take component of 2-part tariff and water take only licences ($2015-16)

Unregulated rivers	Draft Price ($/ML of water take)					Change from 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	1.60	2.31	2.31	2.31	2.31	44%	52%
Gwydir	1.60	2.31	2.31	2.31	2.31	44%	52%
Namoi	1.60	2.31	2.31	2.31	2.31	44%	52%
Peel	1.60	2.31	2.31	2.31	2.31	44%	52%
Lachlan	2.52	2.73	2.73	2.73	2.73	8%	13%
Macquarie	2.52	2.73	2.73	2.73	2.73	8%	13%
Far West	2.00	2.37	2.37	2.37	2.37	19%	29%
Murray	2.91	3.95	3.95	3.95	3.95	36%	44%
Murrumbidgee	3.55	5.44	5.44	5.44	5.44	53%	61%
North Coast	3.00	4.61	4.61	4.61	4.61	54%	65%
Hunter	2.17	1.98	1.98	1.98	1.98	-9%	1%
South Coast	1.48	1.39	1.39	1.39	1.39	-6%	27%

Unregulated river: 1-part tariff

Entitlement prices for licence holders on a 1-part tariff are the sum of the entitlement price and the water take price for the 2-part tariff. Table 1.6 shows that all unregulated water sources on a 1-part tariff face decreases in their prices over 2015-16 to 2019-20.

Table 1.6 Unregulated river prices – fixed charges for 1-part tariff ($2015-16)

Unregulated rivers	Draft Price ($/ML of entitlement)					Change from 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	5.34	4.47	4.47	4.47	4.47	-16%	-12%
Gwydir	5.34	4.47	4.47	4.47	4.47	-16%	-12%
Namoi	5.34	4.47	4.47	4.47	4.47	-16%	-12%
Peel	5.34	4.47	4.47	4.47	4.47	-16%	-12%
Lachlan	8.39	5.25	5.25	5.25	5.25	-37%	-35%
Macquarie	8.39	5.25	5.25	5.25	5.25	-37%	-35%
Far West	6.67	6.25	6.25	6.25	6.25	-6%	2%
Murray	9.67	6.42	6.42	6.42	6.42	-34%	-30%
Murrumbidgee	11.85	8.50	8.50	8.50	8.50	-28%	-24%
North Coast	10.01	8.90	8.90	8.90	8.90	-11%	-4%
Hunter	4.48	3.20	3.20	3.20	3.20	-29%	-21%
South Coast	3.74	3.03	3.03	3.03	3.03	-19%	11%

1.3.3 Groundwater

Groundwater entitlement and water take component of 2-part tariff

Our draft entitlement prices for customers in groundwater sources are shown in Table 1.7.

Table 1.7 Groundwater prices –fixed component of 2-part tariff ($2015-16)

Groundwater	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-2020(%)	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Inland[a]	4.86	3.61	3.61	3.61	3.61	-26%	-18%
Murrumbidgee	2.47	2.13	2.22	2.31	2.40	-3%	-7%
Coastal	4.07	1.65	1.65	1.65	1.65	-59%	-55%

[a] Excluding Murrumbidgee.

Draft water take prices for customers in groundwater sources are shown in Table 1.8.

Table 1.8 Groundwater prices – water take component of 2-part tariff and water take only licences ($2015-16)

Pricing water source – Groundwater	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-2020(%)	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Inland[a]	2.09	2.93	2.93	2.93	2.93	40%	55%
Murrumbidgee	1.07	1.72	1.79	1.87	1.94	81%	73%
Coastal	1.85	3.08	3.08	3.08	3.08	66%	84%

[a] Excluding Murrumbidgee.

Groundwater: 1-part tariff

Entitlement prices for groundwater water users on a 1-part tariff are the sum of the 2-part entitlement and water take prices. Table 1.9 shows our draft 2019-20 prices are lower in the Inland and Coastal sources.

We have maintained a separate price for Murrumbidgee groundwater users within the Inland groundwater source. Prices in the Murrumbidgee are on a glide path towards the prices for the Inland water source.

Table 1.9 Groundwater prices – fixed charges for 1-part tariff ($2015-16)

Pricing water source – Groundwater	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-2020(%)	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Inland[a]	6.95	6.54	6.54	6.54	6.54	-6%	4%
Murrumbidgee	3.53	3.85	4.01	4.18	4.34	23%	17%
Coastal	5.92	4.73	4.73	4.73	4.73	-20%	-11%

a Excluding Murrumbidgee.

1.3.4 Increase to the minimum annual charge (MAC)

Our draft decision is to set a minimum annual charge (MAC) to transition from $150 to $200 per licence, per year over the proposed 4-year determination period. The price levels for the MAC are shown in Table 1.10.

Table 1.10 IPART's draft minimum annual charge ($2015-16)

Pricing water source – All	Current	2016-17	2017-18	2018-19	2019-20
Minimum annual charge	105.34	150	167	184	200

1.3.5 A price for WaterNSW in the South Coast unregulated valley

We have decided to apply a levy to WaterNSW which will recover the costs specific to the development of the Metropolitan Water Plan (MWP) for the Sydney metropolitan region.

The prices for the South Coast unregulated water source have been calculated based on a notional revenue requirement which excluded the costs of the MWP.

The costs of the MWP will be recovered from WaterNSW via a specific charge. We have set the maximum price on a present value neutral basis to recover MWP costs. The draft price is attached to WaterNSW's entitlement (see Table 1.11).

Table 1.11 Special entitlement charge for WaterNSW ($2015-16)

Pricing water source – Unregulated rivers	Draft Price ($/ML of entitlement)				Change 2015-16 to 2019-2020(%)	
	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
South Coast	0.85	0.85	0.85	0.85	na	na

Note: WaterNSW unregulated licences are subject to special price that reflects MWP costs. The charge is payable in addition to standard entitlement charges for South Coast unregulated rivers.

1.4 Draft meter service and reading charges

Our draft decisions on meter service and reading charges are listed in the sections below.

1.4.1 Meter service charges

Meter service charges apply to government-owned water meters, and recover the efficient cost of operating, maintaining and in some cases reading the meter. These charges are levied annually.

Table 1.12 Draft decision on meter service charges ($2015-16)

Meter size (mm)	Telemetered or agency read sites (annual charge per site)	Non-telemetered sites with customer reading and reporting (annual charge per site)
50-300	481	378
350-700	500	392
750-1000	544	426

1.4.2 Meter reading charges

Water take reading/assessment charges apply to water users with privately owned meters in unregulated river and groundwater water sources where meters are read, or water take is otherwise determined by DPI Water. The charge only applies to privately owned meters where the meter is not telemetered and the customer does not supply the reading.

Table 1.13 Draft decision on water take reading/assessment charges ($2015-16)

Charge	2016-17	2017-18	2018-19	2019-20
IPART's draft decision	$193.76	$193.76	$193.76	$193.76

1.4.3 Ancillary service charges

Ancillary services are rarely used and are billed on a fee for service basis. These charges relate to meter laboratory verification, meter in-situ validation and meter restarts.

Table 1.14 Draft decision on ancillary service charges ($2015-16)

Ancillary Service	Charge
Meter laboratory verification at request of customer (refundable if meter is tested to be outside the accuracy standard)	$1,751.40
Meter in-situ validation charge – where a meter is moved or disturbed	$240.00
Meter reset fee after suspension of maintenance for a year or more, at customer request	$240.00 plus cost of parts

1.5 Draft consent transaction charges

Water consent transaction charges recover DPI Water's efficient costs of issuing and amending water access licenses, performing water allocation assignments and works approvals. They are a 'fee-for-service' levied on a user pays basis.

Table 1.15 Draft decision on consent transactions charges ($2015-16)

Consent transaction activity	Charge per transaction	
	No online lodgement	Online lodgement
Any new water access licence		
Zero share	322.47	288.71
Controlled allocation	322.47	288.71
Other	322.47	288.71
Water access licence dealings		
Dealings – regulated rivers	347.93	315.66
Dealings – unregulated rivers and groundwater	1,044.87	1,011.11
Dealings – unregulated rivers and groundwater with low risk	492.20	459.94
Dealings – administrative	237.61	203.85
Water allocation assignments		
Unregulated rivers and groundwater	347.93	315.66
Approvals		
New or amended works and/or use approval	1,924.63	1,890.87
New or amended works and/or use approval – low risk	1,040.36	1,006.60
New basic rights bore approval	398.06	364.30
Amended approval – administrative	237.61	203.85
Extension of approval – lodged before expiry date	240.55	206.79
Extension of approval – lodged after expiry date	400.92	na

Note: The consent transaction charges were calculated on a present value neutral basis. This approach ensures the revenue recovered over the determination from constant prices is equivalent to that proposed by Synergies (IPART's expenditure consultant). We have included the 1.5% annual efficiency adjustment in this calculation.

Source: IPART adjustments based on DPI Water submission to IPART, September 2015, Table 9.4, pp 240-241.

1.6 Structure of this report

The rest of this Report explains IPART's draft decisions 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 10 explain our key decisions and findings in relation to setting water management prices
- Chapters 11 and 12 explain our decisions on meter service and consent transaction charges
- Chapter 13 discusses our analysis of the Determination's implications for water users, DPI Water and the NSW Government
- Chapter 14 presents our recommendations for improving DPI Water's systems and performance, through improvements to the reporting framework.

We have also had regard to the requirements of section 15 of the IPART Act (see Appendix A). In considering these matters, we have to balance the diverse needs and interests of stakeholders, as well as ensuring that DPI Water is adequately recompensed for the services it provides

1.7 IPART's draft decisions

Monopoly services

1 IPART's draft decision is to accept DPI Water's proposed government monopoly service activities for the 2016 Determination. 35

– However, we have excluded 25% of the cost of the Metropolitan Water Directorate's development of the Metropolitan Water Plan, as we consider these costs do not relate to WAMC's monopoly activities. 35

Length of determination

2 IPART's draft decision is to accept DPI Water's proposed 4-year determination period, from 1 July 2016 to 30 June 2020. 40

Operating expenditure allowance

3 IPART has reduced DPI Water's proposed operating expenditure allowance by $20.12 million (or 9.8%), from $204.72 million to $184.60 million over the 2016 determination period (Table 4.1). 42

Murray Darling Basin Authority (MDBA) and Dumaresq-Barwon Border Rivers Commission (BRC) allowance

4 IPART has accepted DPI Water's proposed allowance for BRC costs, totalling $1.47 million over the 2016 determination period (see Table 4.2). 46

5 IPART has reduced DPI Water's proposed allowance for MDBA costs by $1.2 million (or 3.2%), from $37.1 million to $35.9 million, over the 2016 determination period (see Table 4.2). 46

Prudent and efficient capital expenditure

6 IPART's draft decision is to accept DPI Water's historical capital expenditure over the 2011 determination period as shown in Table 5.1. 52

7 IPART's draft decision on forecast capital expenditure over the 2016 determination period is listed in Table 5.2. 54

– We have accepted Synergies' recommendation to reduce DPI Water's proposed capital expenditure by a total of $1.9 million over the 2016 determination period. 54

Regulatory Asset Base (RAB)

8 IPART has set DPI Water's opening Regulatory Asset Base at the commencement of the determination period (1 July 2016) at $6.30 million (Table 6.2). 57

Return on assets

9 IPART has applied a post-tax real WACC of 4.8% to calculate the return on DPI Water's assets. This would generate a return on assets of $2.04 million over the 2016 determination period (Table 6.3). 60

Return on working capital

10 IPART has set the return on working capital at $1.94 million over the 2016 determination period (Table 6.4). 61

Regulatory depreciation

11 IPART has set regulatory depreciation at $3.71 million over the 2016 determination period (Table 6.6). 62

Tax allowance

12 IPART has included a tax allowance of $0.27 million over the determination period for DPI Water's taxable income for its monopoly services, as shown in Table 6.8. 63

13 IPART has not included DPI Water's government cash grants and contributions in calculating the tax allowance. 63

Notional revenue requirement

14 IPART's draft decision on DPI Water's notional revenue requirement (NRR) for its monopoly water management services is shown in Table 7.1. This totals $229.9 million over the 2016 determination period. 67

User share of total efficient costs

15 IPART's draft decision is to accept DPI Water's proposed 72% user share of costs, consistent with the impactor pays principle. This means the user share of DPI Water's total efficient costs (to be recovered through water management charges) is $166.1 million over the 2016 determination period (see Table 7.2). 69

Allocation of user share of costs across water sources

16 IPART's draft decision is to accept DPI Water's proposed cost drivers to allocate the user share of costs across water sources. 73

17 IPART's draft decision on the allocation of the user share of costs across water sources is as shown in Table 7.5. 73

Price structures

18 IPART's draft decision is to maintain the geographic split of prices for regulated and unregulated sources, and an inland/coastal division for groundwater sources. 81

19 IPART's draft decision is to accept DPI Water's proposed tariff categories for licences, namely: 83

- entitlement charge licences (subject to an annual entitlement price through 1- or 2-part tariffs) 83
- water take charge only licences (subject only to the water take price), and 83
- minimum charge only licences (subject only to the minimum annual charge). 83

20 IPART's draft decisions for entitlement charge licences are to set: 83

- 2-part tariffs, comprised of a fixed charge ($ per ML of entitlement or unit share) and a water take charge ($ per ML of water extracted), for regulated rivers, unregulated rivers and groundwater, where water take is measured, and 83
- 1-part tariffs, comprised of a fixed charge (per ML of entitlement or unit share), for unregulated rivers and groundwater, where water take is not measured. 83

21 IPART's draft decisions for entitlement charge licences are to 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% 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. 83

Starting prices and price path

22 IPART's draft decision is to establish 2016-17 prices (starting prices) using DPI Water's proposed basis so that the 'typical bill' for a 2-part tariff licence (not subject to the minimum annual charge) in each water source does not increase when compared to 2015-16 prices. 85

23 IPART's draft decision is to establish a price glide path from 2017-18 onwards whereby the annual real increase in prices is equal to 2.5% of the full cost recovery price, until full cost recovery is achieved. 85

Minimum annual charge

24 IPART's draft decision is to set a minimum annual charge (MAC) to transition from $150 to $200 per licence, per year over the proposed 4-year determination period. Our draft MAC is presented in Table 8.1. 87

Floodplain harvesting licences

25 IPART's draft decision is to accept DPI Water's proposal to set separate water management prices to apply from 1 July following Ministerial approval to issue all floodplain harvesting licences (as water take charge only licences) for that water source. 88

Other special categories of licences

26 IPART's draft decision is to accept DPI Water's proposed special categories of licences as per Table 8.2. 90

Separate price for WaterNSW (South Coast unregulated rivers)

27 IPART's draft decision is to apply a separate price to WaterNSW, which will recover the user share of Metropolitan Water Directorate's costs to review the Sydney Metropolitan Water Plan (MWP). The price will be an additional fixed charge ($ per ML of entitlement or unit share) applied to the water access licences held by WaterNSW in South Coast (unregulated rivers) water source. 93

Forecast water entitlements and water take

28 IPART's draft decision is to apply the entitlement volumes proposed by DPI Water for the purpose of setting fixed charges, which are listed in Table 9.1, Table 9.2 and Table 9.4. 96

29 IPART's draft decision is to apply DPI Water's proposed entitlement volumes for WaterNSW, for the purpose of setting a separate price for WaterNSW (South Coast unregulated rivers) (Table 9.3). 96

30 IPART's draft decision is to apply the forecast water take volumes (including floodplain harvesting) submitted in DPI Water's pricing proposal, for the purpose of setting water take charges (as outlined in Table 9.5, Table 9.6, and Table 9.7). 101

31 IPART's draft decision is to apply the forecast water take volumes for floodplain harvesting, submitted in DPI Water's pricing proposal, for the purpose of setting water take charges with floodplain harvesting (as outlined in Table 9.8). 106

Demand volatility adjustment mechanism

32 We will consider at the next determination of WAMC's prices: 108

- An adjustment to the revenue requirement and prices to address any over or under-recovery of revenue over the 2016 determination period due to material differences between the level of billable water take over the period and the forecast water take volumes used in making this determination. 108
- At the next determination, we will consider whether and how best to make a revenue adjustment based on the circumstances at the time. 108

Water management prices

33 IPART's draft decision is to set the maximum water management prices listed in Table 10.1 to Table 10.17. 110

Metering service charges, meter reading charges and ancillary service charges

34 IPART's draft decision on meter service charges is listed in Table 11.1. We have: 123

- Set charges based on meter size, but not differentiated charges by meter size to the extent proposed by DPI Water (ie, we have adopted a flatter charge schedule). 123
- Accepted DPI Water's proposed structuring of meter charges based on two categories: (1) telemetered/non-telemetered and agency read, and (2) non-telemetered customer read sites. 124
- Applied a 1.5% efficiency adjustment to meter service charges, relative to DPI Water's proposal. 124

35 IPART's draft decision is to accept DPI Water's water take reading/assessment charge, subject to an efficiency adjustment of 1.5% as shown in Table 11.4. 127

36 IPART's draft decisions on ancillary service charges are listed in Table 11.5. These charges are as proposed by DPI Water. 129

Consent transaction charges

37 IPART's draft decision on DPI Water's consent transaction charges is shown in Table 12.1. These charges are as proposed by DPI Water, except for: 131

- three charges (regulated rivers dealings, unregulated rivers and groundwater low risk dealings, and water allocation assignments) where we made adjustments, and 131
- a 1.5% efficiency adjustment applied each year. 131

38 IPART has not accepted DPI Water's proposed fee variations for: 131

- rounding fees to the nearest dollar, and 131
- recovering future title register search costs. 131

Impacts of prices

39 We have assessed the impact of our draft prices on water users and consider the impact reasonable. 137

40 We have considered the impact of our draft prices on regulated rivers licences that also pay WaterNSW charges for bulk water services and consider the impact reasonable. 144

41 We have assessed the impact of our draft prices on the cost of operating farm businesses and considered them reasonable. 146

42 We have considered the impact of our draft prices within the context of the water market and note that the DPI Water costs are relatively minor in comparison to potential returns. 146

Draft output measures

44 IPART's draft decision is for DPI Water to report annually against the output measures and in accord with the framework listed in Appendix F. This report will be published on IPART's website. 150

2 Overview of approach to set prices

In this review, we will set prices to apply from 1 July 2016 (the 2016 Determination) for the Water Administration Ministerial Corporation (WAMC).[7]

The commencement of this review was deferred by two years following separate requests from the then NSW Office of Water (NOW).

This chapter outlines our task in this review and provides background information on the deferral requests from NOW and the NSW bulk water reforms.

We also outline the matters we take into account in the course of our review and the approach we take. Our review can be represented as a sequence of steps. Each step involves making decisions on methods and key parameters.

Over the course of the review, we have released an Issues Paper and received submissions in response to this Issues Paper.[8] We have also held three public hearings to provide an opportunity for stakeholders to present their views – in Tamworth, Sydney and Griffith.

Following the release of our Draft Determination and Draft Report, stakeholders will be able to provide further input to our review by making submissions on our draft decisions. We will consider stakeholder submissions when formulating our Determination and Final Report.

The timetable for our review is set out at the end of this chapter.

7 The Water Administration Ministerial Corporation (WAMC) is the statutory body under the *Water Management Act 2000* (NSW) responsible for water management in New South Wales. Its water planning and management activities are delivered by DPI Water.

8 IPART, *Review of Prices for the Water Administration Ministerial Corporation for the NSW Office of Water – from 1 July 2016 - Issues Paper*, June 2015.

2.1 The 2016 price review

We set the maximum prices for the monopoly water management services that DPI Water currently delivers on behalf of the Water Administration Ministerial Corporation (WAMC). Under *the Independent Pricing and Regulatory Tribunal (Water Services) Order 2004,* WAMC's declared monopoly services involve: the making available of water, the making available of water supply facilities, and the supply of water.

There are three types of maximum prices that we set for WAMC:

- **Water management charges** – annual charges based on holding entitlements for water and extracting water from regulated rivers, unregulated rivers and groundwater sources.
- **Consent transaction charges** – fee-for-service charges for regulatory transactions such as issuing Water Access Licences (WALs) and works approvals under the *Water Management Act 2000* (NSW) and the *Water Act 1912* (NSW).
- **Water take measurement services charges** – annual charges for maintaining government meters and reading meters or approved meter equivalents (for unregulated river and groundwater users only).[9]

The current determination set prices for the period 1 July 2011 to 30 June 2014 (the 2011 Determination).[10] As outlined below, the commencement of this review was deferred by two years following separate requests from the then NSW Office of Water (NOW).[11] Given the deferral of this price determination, prices prevailing at 30 June 2014 have remained constant in nominal terms in 2014-15 and 2015-16.[12]

9 These charges were defined as 'Meter service and reading charges' in the 2011 Determination. DPI Water has proposed a change in terminology from 'metering' to 'water take measurement' to recognise that other devices can be used in lieu of metering to measure water take. The latter term replaces 'water use', to reflect the terminology of *Water Act (2007)* (Cth).

10 IPART, *Review of prices for the Water Administration Ministerial Corporation – Determination and Final Report*, February 2011.

11 Letter from NSW Office of Water, 15 March 2013, and Letter from the Department of Primary Industries, 4 July 2014.

12 The deferral means that prices remain constant in nominal terms until IPART makes a new determination (clause 2(d) of the current Determination).

On 15 March 2013, NOW requested a 12-month deferral of the new price determination to allow for clarification of the NSW Government's position on the Murray-Darling Basin Plan and to refocus on its data gathering.[13]

On 4 July 2014, we received a letter from NOW requesting a further 12-month deferral of the new price determination.[14] We decided to defer this price review for a further 12 months, noting:

- the significant operational reforms that NOW would be undertaking over the following 12 months as a result of the NSW Government's bulk water reforms, and
- uncertainty over the implications of the NSW Government's recent signing of the Murray-Darling Basin Plan on NOW's activities.

In this review, we will set prices to apply from 1 July 2016 (the 2016 Determination).

NSW bulk water reforms

While undertaking this review we are aware of the bulk water reforms that are underway in NSW.

In 2013, the NSW Government commissioned an independent review of bulk water to investigate the potential for governance and functional reforms that could result in improved service delivery and better outcomes for customers. Stage one of the NSW Bulk Water Reforms created WaterNSW through the merger of the State Water Corporation and the Sydney Catchment Authority.[15]

Implementation of further reforms, as announced by the Minister for Lands and Water on 3 July 2015, is currently being considered, and may result in a substantial realignment of the functions between DPI Water and WaterNSW.[16]

IPART is not currently aware of the scope of functions to be transferred to WaterNSW. We have assessed the efficient costs of WAMC's monopoly services, currently delivered by DPI Water, as part of this review and used these estimates as the basis for setting **WAMC's maximum prices**. We note that activities related to these services could be delivered by other parties **on behalf of WAMC**, such as WaterNSW, through methods such as service agreements and other appropriate arrangements.

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13 On 15 March 2013, NOW wrote to IPART to formally request that we delay the 2014 price review (that would have commenced on 1 July 2014) for 12 months. We agreed to defer the review as requested, and noted that the deferral means that prices prevailing at 30 June 2014 remain constant in nominal terms until IPART makes a new determination (under clause 2(d) of the current determination).

14 Letter from the Department of Primary Industries, 4 July 2014.

15 The Hon Katrina Hodgkinson MP, Minister for Primary Industries, *New world-class water delivery provider for NSW*, Media release Tuesday 4 March 2014.

16 DPI Water submission to IPART, September 2015, p 2; WaterNSW submission to IPART, 9 October 2015, p 1.

However, if WAMC's functions are formally transferred from WAMC to WaterNSW and the relevant services are provided by WaterNSW under its independent statutory functions (rather than on behalf of WAMC), IPART would consider whether there is a need for a new determination.

2.2 IPART's approach to the review

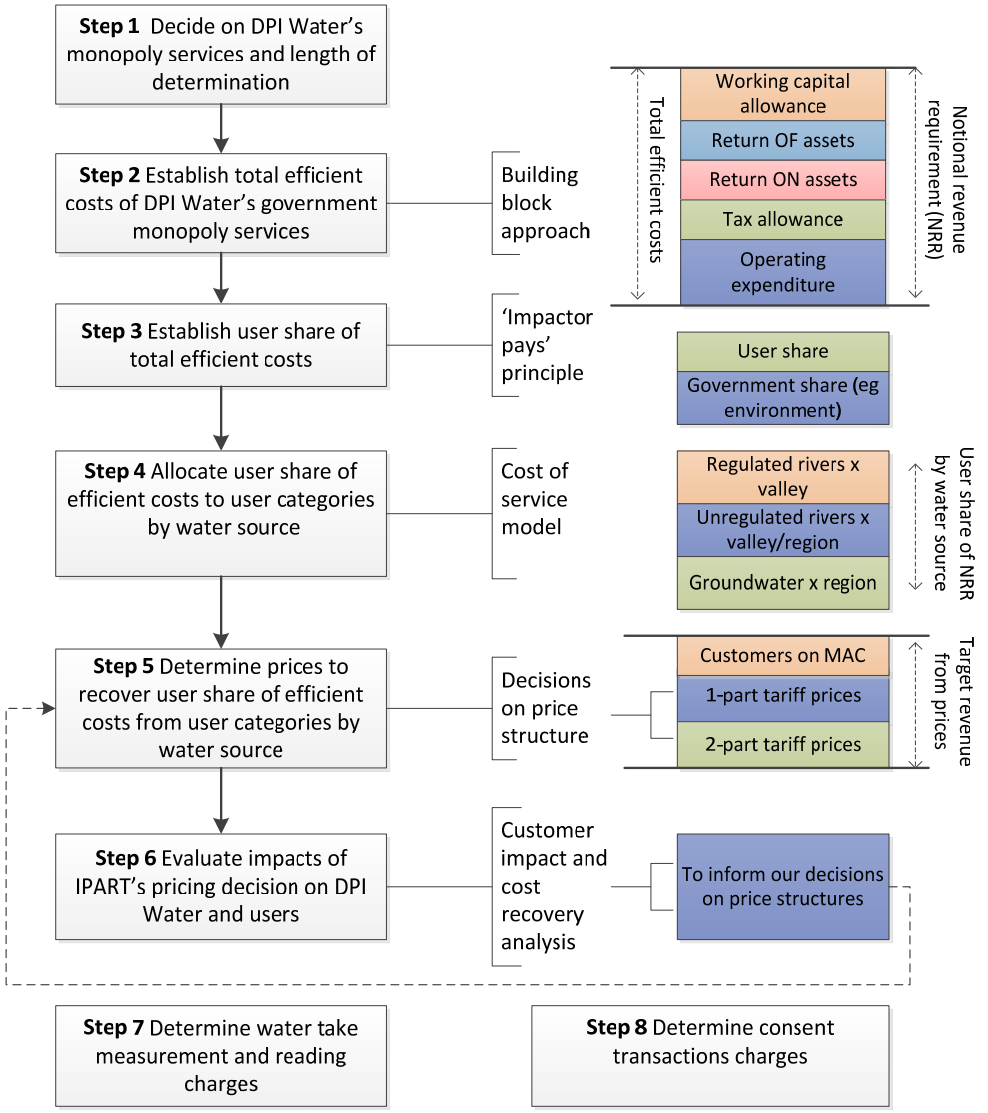
We are conducting our review under section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992* (the IPART Act). We are taking account of the following matters in the course of our review:

- DPI Water's roles and functions in relation to water management, including legislative requirements and objectives for water management
- the efficiency of DPI Water's proposed expenditure program, the outcomes that will be achieved by this level of expenditure (relative to DPI Water's legislative responsibilities), and the scope for further efficiency gains over the 2016 determination period
- the appropriate rate of return DPI Water should earn on its water management assets
- the appropriate sharing of DPI Water's costs between water users and the broader community
- forecast volumes of water extracted from regulated rivers, unregulated rivers and groundwater sources over the 2016 determination period
- forecast volumes of water entitlements for regulated rivers, unregulated rivers and groundwater sources over the 2016 determination period
- the structure of water management charges, including the ratio of fixed (entitlement) to usage (water take) charges, and the extent to which prices for water management activities should vary by valley / water source, and
- the implications of our pricing decisions, including the impact on DPI Water, water users and the community.

In considering these matters, we are required to balance the needs and interests of stakeholders, as well as ensuring that DPI Water is adequately recompensed for the services it provides.

Our review can be represented as a sequence of steps. Each step involves making decisions on methods and key parameters. The process we undertake to conduct the review is presented in Figure 2.1.

Figure 2.1 IPART's approach to the review of prices for DPI Water



Note: Operating expenditure block in the building block diagram includes Murray Darling Basin Authority (MDBA) and Dumaresq-Barwon Border Rivers Commission (BRC) costs. Building block components are not to scale. While technically part of the operating expenditure, contributions to MDBA and BRC will be reported separately in summary tables for transparency purposes.

Source: IPART Analysis.

As an additional step to our draft determination of prices, we also establish DPI Water's output measures and performance indicators for the 2016 determination period (see Chapter 14).

Step 1 – decide on monopoly services and length of determination

We start our review by making a decision on the scope of government monopoly services provided by DPI Water on behalf of WAMC, under the *Water Services Order 2004.*

We also decide on the length of the determination period (see Chapter 3).

Step 2 – establish total efficient costs, or notional revenue requirement (NRR)

Using the **building block approach**, we establish the notional revenue requirement (NRR), or total efficient costs, to provide the monopoly services over the determination period. We use expenditure consultants to inform our assessment of efficient costs. The building block approach and its components are discussed further in this chapter. Our evaluation of the building block components is presented in Chapters 4-6, with total efficient costs presented in Chapter 7.

Step 3 – establish user share of efficient costs

Total efficient costs are then shared between water entitlement holders ('users') and the Government (on behalf of the broader community), based on the '**impactor pays'** principle (see Chapter 7).

This allocation occurs at the activity code level. That is, each activity code is assigned a user share (percentage), and the efficient costs of that activity code are shared between users and the Government according to that share.

As outlined below, water management charges are set to recover the user share of costs (or user share of notional revenue requirement).

Step 4 – allocate user share of efficient costs across water sources

The user share of total efficient costs is then allocated to 'water sources', defined as the combination of water type (ie, regulated rivers, unregulated rivers and groundwater) and geographic location (ie, valley or region).[17]

We use a **cost allocation model** that uses cost drivers (or allocators) for each activity code to allocate the user share of each activity's costs to water sources (see Chapter 7).

[17] We note that the term 'water source' has a different meaning within the context of Water Sharing Plans. DPI Water refers to 'pricing water source' in its submission, see DPI Water submission to IPART, September 2015, p 2.

Step 5 – determine water management prices to recover the user share of efficient costs

We set water management prices for each water source, to recover the user share of notional revenue requirement allocated to that water source.

We make a series of decisions on the **structure** of water management prices. This includes decisions such as:

- geographic differentiation (ie, defining the geographic boundaries for a common price level to apply)
- tariff structure (1- and 2-part tariffs, including a decision on the relative shares of fixed and variable charges in 2-part tariff revenue), and
- the level of the minimum annual charge (MAC) (see Chapter 8).

To set prices for 1- and 2-part tariffs, we also need to establish the forecast volume of entitlement and water take for each water source to use as a basis of distributing the user share of revenue requirements. We determine these forecasts in Chapter 9.

We endeavour to set cost-reflective prices, so that revenue raised through water management charges from a water source covers the user share of notional revenue requirement for that water source. Water management charges can be set so that revenue matches the user share of notional revenue requirement in each year of the determination period, or they can be set so that revenue matches the user share of revenue requirements on a net present value (NPV) basis over the determination period. These prices are called 'full cost recovery prices' (FCRP).

In some water sources, setting charges at FCRP may have large impacts on water users. To mitigate these impacts, we may choose to set charges below FCRP over the 2016 determination period, and transition towards FCRP over several determinations. This relates to the trajectory of prices over a period, or the 'glide path' of prices (see Chapter 8). It is also linked to customer impacts, which is discussed in Step 6 below and also in Chapter 13.

Our draft water management prices by water source are presented in Chapter 10.

Step 6 – evaluate impacts of our pricing decisions

Step 5 may result in prices set at FCRP level or below the FCRP level for some water sources. The total revenue recovered through the draft water management charges is called 'target revenue'.

The share of target revenue as a percentage of the user share of notional revenue requirement is called 'the level of cost recovery'. The shortfall is funded by the Government as a Community Service Obligation (CSO). We evaluate the level of cost recovery and the amount of CSO, to establish the impact of our pricing decisions on DPI Water.

We use the 'typical bill' analysis to evaluate the impact of our pricing decisions on water users (see Chapter 13).

Step 7 – determine water take measurement service charges

In this step, we determine charges related to water take measurement, which are set separately to our determination of water management prices. These are meter service charges (for government-owned meters in unregulated rivers and groundwater sources); water take reading/assessment charges (for privately owned meters); and ancillary service charges. These charges are set on an efficient incremental cost basis (see Chapter 11).

Step 8 – determine consent transactions charges

In this step, we determine consent transactions charges, which are set separately to our determination of water management prices. These charges are set on an efficient incremental cost basis (see Chapter 12).

2.2.2 IPART's building block approach

As part of Step 2 in the price-setting process (see Figure 2.1), we need to determine DPI Water's revenue requirement for providing its monopoly services. We have used the 'building block' method to calculate DPI Water's revenue requirement for its monopoly water management activities, consistent with the last review.

Under the building block method, the notional revenue requirement of the regulated business is the sum of operating expenditure, a return on capital, a regulatory depreciation (or return of capital) allowance, a tax allowance, and a return on working capital.

The notional revenue requirement does not explicitly include capital expenditure. Rather, capital expenditure to maintain or augment the asset base is funded from the return of capital, injections of equity, and borrowings (or other financing approaches). Both return on capital and return of capital are usually calculated with reference to the Regulatory Asset Base (RAB). Ultimately, only capital expenditure we deem to be **prudent, efficient** and **funded by the business** is included in the RAB.

The notional revenue requirement represents our view of DPI Water's full, efficient costs of providing the monopoly services for each year of the determination period. To apply the building block method, for each year of the 2016 determination period, we will determine:

- An **allowance for operating expenditure** that represents our estimate of DPI Water's forecast efficient operating, maintenance and administration costs (see Chapter 4).
- An **allowance for a return on the assets** DPI Water uses to provide the monopoly services. This amount represents our assessment of the opportunity cost of the funds invested in DPI Water, and ensures that it can continue to make efficient investments in capital in the future. In the 2011 Determination, we used a real pre-tax Weighted Average Cost of Capital (WACC) in calculating the return on the RAB. For this review, we will use a real post-tax WACC. Our decision on prudent and efficient capital expenditure, to be added to the RAB, is presented in Chapter 5. Our evaluation of the RAB, the WACC and the return on the RAB are presented in Chapter 6.
- An **allowance for a return of assets (regulatory depreciation)**. This allowance recognises that through the provision of services to customers, a business' capital infrastructure will wear out over time and, therefore, revenue is required to recover the cost of maintaining the RAB (see Chapter 6).
- An **allowance for meeting tax obligations**. As we now use a real post-tax WACC, we have added a separate allowance to approximate tax obligations for DPI Water as a separate cost block.[18] We consider this method more accurately estimates the tax liability for a comparable commercial business. The tax allowance is discussed in Chapter 6.
- An **allowance for a return on working capital**. This allowance represents the holding cost of net current assets.[19] This allowance typically represents a very small proportion of each agency's total notional revenue requirement. Working capital is discussed in Chapter 6.

The sum of these amounts represents our view of DPI Water's total efficient costs over the determination period, or its notional revenue requirement (see Chapter 7).

18 IPART, *The incorporation of company tax in pricing determinations – Final Decision*, December 2011, p 13.

19 Net current assets = current assets – current liabilities.

2.3 What is IPART's review process?

Over the course of the review, we have released an Issues Paper and received submissions in response to this Issues Paper.[20] We have also held three public hearings to provide an opportunity for stakeholders to present their views – in Tamworth, Sydney and Griffith.

We have taken stakeholder views into account in setting our draft prices.

Following the release of our Draft Determination and Draft Report, stakeholders will be able to provide further input to our review by making submissions on our draft decisions.

Information on how to make a submission is available on **page iii** of this Draft Report.

The closing date for submission is 4 April 2016.

In making their submissions, interested stakeholders can also review and comment on our Consultant's reports, which are published on our website.

We will consider stakeholder submissions when formulating our Determination and Final Report.

The timetable for our review is set out below in Table 2.1.

Table 2.1 Indicative review timetable

Task	Timeframe
Release Issues Paper	22 June 2015
Submission from DPI Water due	11 September 2015
Public submissions due	9 October 2015
Public Hearing – Tamworth	16 November 2015
Public Hearing – Sydney	23 November 2015
Public Hearing – Griffith	30 November 2015
Release Draft Report and Draft Determination	8 March 2016
Receive submissions on Draft Report and Draft Determination	4 April 2016
Release Final Report and Determination	7 June 2016

Note: Future dates may be subject to change.

[20] IPART, *Review of Prices for the Water Administration Ministerial Corporation for the NSW Office of Water – from 1 July 2016 - Issues Paper*, June 2015.

3 DPI Water's monopoly services and length of determination

We start our review by making a decision on the scope of government monopoly services provided by DPI Water on behalf of WAMC. We then decide on the length of the determination period.

DPI Water's role is to provide sustainable and integrated management of NSW water resources for the benefit of the community and the environment.[21]

This involves protecting water users' property rights, including the water entitlement system, through water access licences. Key activities undertaken by DPI Water include:

- developing Water Sharing Plans
- determining volumes of water available for allocation
- management of registers and trading
- monitoring the water quantity, quality and environmental health, and
- collecting data on water take.

DPI Water has included Murray Darling Basin Authority (MDBA) and Dumaresq-Barwon Border Rivers Commission (BRC) contributions as part of its services.

Not all of DPI Water's water management activities can be considered in setting its water management charges: only those that are 'government monopoly services' as defined in the *IPART (Water Services) Order 2004* can be taken into account.

For each water pricing review, we make a decision on the length of the determination period. In general, this period may be between three and five years, depending on the circumstances. The period of the 2011 Determination was three years (from 1 July 2011 to 30 June 2014). However, the new determination was deferred for two years following two separate requests from the then NSW Office of Water (see Chapter 2 for detail). Given these deferrals, prices have been held constant in nominal terms at levels prevailing at 30 June 2014, until we set new prices to apply from 1 July 2016 (the 2016 Determination).

21 DPI Water submission to IPART, September 2015, p 1.

The following sections summarises our draft decisions on DPI Water's monopoly services and length of determination period.

3.1 Decision on government monopoly services

Draft decision

1 IPART's draft decision is to accept DPI Water's proposed government monopoly service activities for the 2016 Determination.

   – However, we have excluded 25% of the cost of the Metropolitan Water Directorate's development of the Metropolitan Water Plan, as we consider these costs do not relate to WAMC's monopoly activities.

Reasons for our decisions

Monopoly service activities for 2016 Determination

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 2004* 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.

In interpreting this clause for this (and past) determination, 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 the development and refinement of overarching policy frameworks from efficient costs.[22]

At the 2011 Determination, DPI Water's monopoly service activities and the expected outputs of these activities over the 2011 determination period were summarised into a clear statement of deliverables, called the Monopoly Services Outputs Schedule.[23] The Schedule included 11 activity groups (in C-codes), containing 36 activities for the 2011 determination period.

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

23 IPART, *Review of Prices for the Water Administration Ministerial Corporation - Final Report*, February 2011, Appendix L.

In its submission to this determination, DPI Water proposed a revised schedule of 10 activity groups, containing 33 activities for the 2016 determination period (in W-codes), "to improve the definition, accountability, recording and reporting of water planning and management services".[24] See Table 3.1 for the list of DPI Water's proposed activities for the 2016 determination period.

Table 3.1 DPI Water's monopoly services for the 2016 Determination

Activity code	Description	Activity code	Description
W01	**Surface water monitoring**	**W06**	**Water management planning**
W01-01	Surface water quantity monitoring	W06-01	Water plan development (coastal)
W01-02	Surface water data management and reporting	W06-02	Water plan development (inland)
W01-03	Surface water quality monitoring	W06-03	Floodplain management plan development
W01-04	Surface water algal monitoring	W06-04	Drainage management plan development
W01-05	Surface water ecological condition monitoring	W06-05	Regional planning and management strategies
W02	**Groundwater monitoring**	W06-06	Development of water planning and regulatory framework
W02-01	Groundwater quantity monitoring	W06-07	Cross border and national commitments
W02-02	Groundwater quality monitoring	**W07**	**Water management works**
W02-03	Groundwater data management and reporting	W07-01	Water management works
W03	**Water take monitoring**	**W08**	**Water regulation management**
W03-01	Water take data collection	W08-01	Regulation systems management
W03-02	Water take data management and reporting	W08-02	Consents management and licence conversion
W04	**Water modelling and impact assessment**	W08-03	Compliance management
W04-01	Surface water modelling	W08-99	Water consents overhead
W04-02	Groundwater modelling	**W09**	**Water consents transactions**
W04-03	Water resource accounting	W9-01	Water consents transactions
W05	**Water management implementation**		
W05-01	Systems operation and water availability management	**W10**	**Business and customer services**
W05-02	Blue-green algae management	W10-01	Customer management
W05-03	Environmental water management	W10-02	Business governance and support
W05-04	Water plan performance assessment and evaluation	W10-03	Billing management

Source: DPI Water submission to IPART, September 2015, pp 271-287.

[24] DPI Water submission to IPART, September 2015, p 4.

DPI Water provided mapping between C-codes and W-codes to verify the scope of WAMC's monopoly water management services.[25] Our Consultant, Synergies, reviewed the mapping and found that DPI Water's proposed activities and expenditures align with its strategic objectives and functions.[26] The mapping is provided in Appendix B.

A new activity, Surface water ecological condition monitoring, has been proposed. Synergies assessed this activity as being consistent with a monopoly water management service.[27]

Synergies concluded that all activities proposed by DPI Water for the 2016 Determination are consistent with the *Water Services Order 2004*.[28] We accepted its recommendation.

Murray Darling Basin Authority (MDBA)

The NSW Government has made commitments through the Murray Darling Basin Joint Venture. Some of these commitments relate to the WAMC's government monopoly services.

The Joint Venture is an inter-jurisdictional unincorporated body with a work program under the control and direction of the Murray Darling Basin Ministerial Council. The NSW Minister for Lands and Water, who is also the Minister responsible for WAMC, represents NSW on the Council and enters into commitments on behalf of NSW.

While implementation of the Basin Plan is fully funded by the Commonwealth Government, the MDBA Joint Programs are funded under a cost sharing arrangement between partner jurisdictions. The Joint Programs include projects relating to river operations, managed in NSW by WaterNSW, and water management activities, managed in NSW by DPI Water.

DPI Water is seeking to recover a share of the costs of the water management activities funded through the MDBA Joint Programs from water users in the 2016 Determination. These costs are referred to as 'MDBA costs' or 'MDBA contributions' in our report.

We have accepted that these contributions are government monopoly service activities. Chapter 7 outlines on draft decision on the efficient user share of these contributions.

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25 DPI Water submission to IPART, September 2015, pp 115-117.

26 Synergies *DPI Water expenditure review, Final Report*, January 2016, (Synergies Final Report, January 2016), p 59.

27 Synergies Final Report, January 2016, p 33.

28 Synergies Final Report, January 2016, pp 30-39.

Dumaresq-Barwon Border Rivers Commission (BRC)

The Dumaresq-Barwon Border Rivers Commission (BRC) was created by the NSW and Queensland Governments to control and coordinate the water available from the Border Rivers between the two states. The BRC is funded by contributions from these governments.

DPI Water seeks to recover a share of the costs of the water management activities funded through the BRC from water users in the 2016 Determination.

We have accepted that these contributions are government monopoly service activities.

Assessment of activities out of the scope of monopoly services

Synergies reviewed the costs that should be excluded from the cost base to set water management prices for WAMC's monopoly services, such as:

- costs related to policy development and Ministerial and Parliamentary services[29]
- externally funded activities, and
- fee for service activities (for third parties).[30]

Synergies found that DPI Water's proposed costs did not include any of the costs above, but made recommendation regarding measures to improve transparency around external funding received by DPI Water.[31] This is further discussed in Chapter 14.

Metropolitan Water Directorate activities

Synergies also assessed activities of the Metropolitan Water Directorate (MWD) included in DPI Water's proposed activity code W06-05 (Regional planning and management strategies). Along with the MWD's costs to review two metropolitan water plans (Sydney Metropolitan and Lower Hunter), activity code W06-05 includes DPI Water's activities to complete six new regional water strategies.

[29] National Water Initiative (NWI) pricing principles for recovering the costs of water planning and management activities, cl 13.

[30] Fee for service activities include, among others, the provision of hydrometric data to WaterNSW, the MDBA, water utilities, and local councils. The costs of these activities are not recovered through water management charges.

[31] Synergies Final Report, January 2016, pp 38-39.

DPI Water's submission states that:

> Metropolitan water plans are strategic, non-statutory plans that identify supply and demand measures to secure water supplies supporting population and business growth, including contingency measures for drought, and supporting environmental flow objectives. The metropolitan water plans are special purpose plans within the regional water strategy framework, and their delivery will help meet the objectives and priorities of the regional water strategies.[32]

Regional-level water plans are not classified as policy and should not be exempted from the cost base. We assess that the Metropolitan Water Plan (MWP) falls within the category of 'localised water plan – plans developed to address specific water resource problems (quantity or quality) at a local level'.[33] As such, these are appropriate water planning activities that should be included in the definition of monopoly services.

However, some of the MWD's activities to review the MWP fall outside the scope of monopoly water management services. In our 2011 Determination, our then Consultant (PwC) recommended, and we accepted, that 50% of the full-time equivalents (FTEs) assigned to metropolitan water planning activities be removed from the forecast revenue requirement.[34] These activities related to assessment of demand management measures, water infrastructure planning, water industry competition and recycling strategies. In our 2011 Determination, we accepted PwC's view that these activities did not represent water resource management for the purpose of long term, sustainable supply.

In line with the 2011 Determination, our Consultant Synergies assessed about 50% of MWP costs as related to demand-supply management, and recommended removing these costs from the cost base as out-of-scope.[35]

We did not accept our Consultant's recommendation to exclude demand management activities from the cost base. We examined the **demand management activities** outlined in the MWP and found that, under the NWI principles, measures to improve water use through water use efficiency programs (irrigation, commercial, urban) are included in water management services.[36] Therefore, the NWI principles support inclusion of demand side measures that improve efficiency of water use in the cost base to set water management charges.

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32 DPI Water's submission, p 150.

33 National Water Initiative (NWI) pricing principles for recovering the costs of water planning and management activities, Appendix B – A framework for classifying water planning and management activities, section B1.a)iv.

34 IPART, *Review of prices for the WAMC Pricing Determination – Final Report*, February 2011, p 33.

35 Synergies Final Report, January 2016, p 37.

36 National Water Initiative (NWI) pricing principles for recovering the costs of water planning and management activities, Appendix B – A framework for classifying water planning and management activities, section C.1.a.

We assess that the **environmental planning** activities outlined in the MWP should be included in the scope of monopoly water management services.

However, we assess that the **recycled water and stormwater use planning** activities outlined in the MWP should not be recovered through water management charges.

Similarly, **desalination planning** outlined in the MWP should not be recovered through water management charges.

Our draft decision is to accept demand management activities such as water use efficiency programs (urban) as part of DPI Water's water planning and management activities, but exclude water competition (desalination)[37] and recycling strategies from the scope for the purpose of establishing the cost base for water management charges.

A relevant proxy for the relative importance of the alternative strategies in total water security planning is provided by the share of recycling and desalination in Sydney's projected average demand for water (approximately 600,000 ML per year).[38] The projected output of recycling schemes is around 70,000 ML per year, and the supply capacity of SDP is 90,000 ML per year, accounting for about 27% of the average annual water demand.

On this basis, our draft decision is to exclude 25% of the cost of activity associated with the MWD's development of the MWP (as part of W06-05 activity code) as out of scope for DPI Water's monopoly services. Chapter 4 outlines the amount of MWD costs we deem to be beyond the scope of WAMC's monopoly services and the impacts of our draft findings on the operating expenditure allowance.

3.2 Length of determination

Draft decision

2 IPART's draft decision is to accept DPI Water's proposed 4-year determination period, from 1 July 2016 to 30 June 2020.

Reasons for our decision

DPI Water proposed a 4-year determination period from 1 July 2016 to 30 June 2020, to provide price stability for water access licence holders.[39] We consider that a 4-year determination period is appropriate. A 4-year period provides a stable and predictable regulatory environment for DPI Water and water users, while minimising regulatory costs.

37 Sydney Desalination Plant (SDP) holds the network operator and retail supplier licences under the *Water Industry Competition Act 2006* (WICA). These licences are administered by IPART.

38 2010 Metropolitan Water Plan, p 9.

39 DPI Water submission to IPART, September 2015, p 113.

We consulted on the question of whether we should set the determination period to align with a future determination of WaterNSW (Rural), given the number of common issues and stakeholders across both reviews/agencies. For example, a 5-year determination period would align future price reviews.

However, a number of stakeholders responded that concurrent reviews would put a strain on their resources (eg, in terms of participating in both reviews).[40]

We also consider that a 4-year determination period generally:

- gives better confidence in our expenditure forecasts than five years
- provides sufficient incentives to achieve efficiencies, and
- provides sufficient regulatory certainty, while balancing financial stability.

Our draft decision is to accept DPI Water's proposed 4-year determination period, from 1 July 2016 to 30 June 2020.

[40] For example, Gwydir Valley Irrigators Association, Tamworth public hearing, 16 November 2015, Transcript, p 16; NSW Irrigators Council, Sydney public hearing, 23 November 2015, Transcript, p 8; Macquarie River Food and Fibre, Sydney public hearing, 23 November 2015, Transcript, p 17.

4 Operating expenditure allowance

The allowance for operating expenditure within the notional revenue requirement reflects our assessment of the efficient level of operating costs that DPI Water will incur in carrying out its water management functions.

These costs are expected to primarily relate to labour (remuneration and salary on-costs), but may also include costs of travel, consumable equipment, and contracting of services.

Operating expenditure accounts for the bulk of the total costs DPI Water incurs in providing monopoly water management services, and so has a major impact on water management charges. Over the 2016 determination period, DPI Water's operating expenditure is forecast to be $204.72 million.[41]

In addition to its own operating expenditure, DPI Water contributes on behalf of the NSW Government to two inter-jurisdictional water management organisations - the Murray Darling Basin Authority (MDBA) and the Dumaresq-Barwon Border Rivers Commission (BRC). Over the 2016 determination period, DPI Water's proposed contribution to these organisations is $37.11 million and $1.47 million, respectively.

The following sections comprise our draft decision on DPI Water's operating expenditure allowance, including the operating expenditure allowances for the MDBA and the BRC.

4.1 Operating expenditure allowance

Draft decision

3 IPART has reduced DPI Water's proposed operating expenditure allowance by $20.12 million (or 9.8%), from $204.72 million to $184.60 million over the 2016 determination period (Table 4.1).

Between 2011-12 and 2013-14, overall operating costs have been above what was allowed for in the 2011 Determination (see Figure 4.1). For the 2016 determination period, DPI Water proposed an average operating expenditure of $51.18 million per year.

[41] DPI Water submission to IPART, September 2015, p 177.

Our draft decision on efficient operating expenditure for the 2016 determination period is $184.60 million, which is $20.12 million or 9.8% less than DPI Water's proposal as shown in Table 4.1.

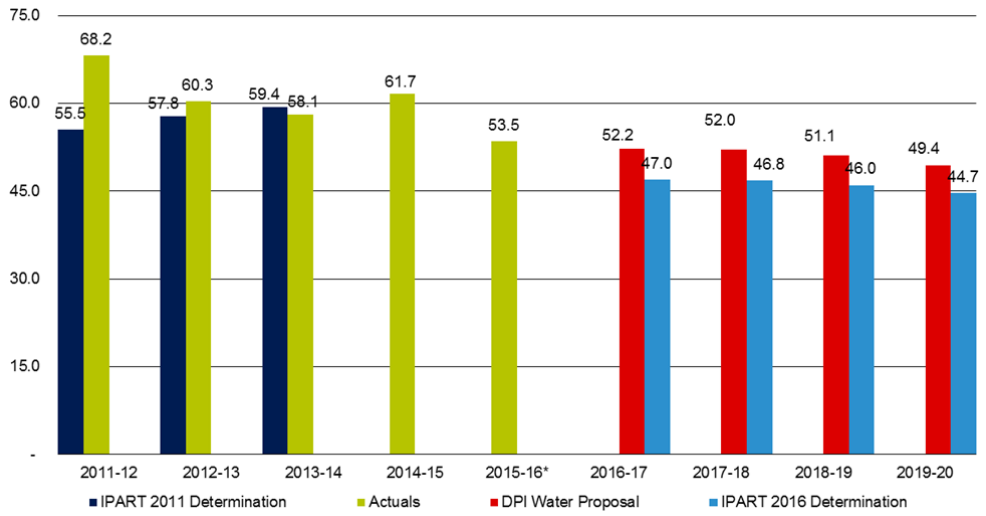
Table 4.1 IPART's draft decision on DPI Water's operating expenditure allowance ($2015-16, $000's)

	2016-17	2017-18	2018-19	2019-20	Total
DPI Water's proposal	52,192	52,035	51,066	49,428	204,722
IPART's draft decision	46,989	46,835	46,045	44,735	184,604
Difference	-5,203	-5,200	-5,021	-4,694	-20,118

Source: IPART Calculations based on DPI Water's submission, p 177.

Figure 4.1 presents IPART's operating expenditure allowance in the 2011 Determination, DPI Water's actual operating expenditure over the 2011 determination period, DPI Water's forecast operating expenditure over the 2016 determination period, and our draft decision on operating expenditure for the 2016 determination period.

Figure 4.1 Operating expenditure - IPART's 2011 Determination, DPI Water's actual and forecast performance (including proposal), and draft decision (millions, $2015-16)



Note: The 2015-16 operating expenditure figure is a forecast.
Data source: IPART calculations.

Reasons for our decision

Based on findings by our expenditure consultant, Synergies, and stakeholder concerns about DPI Water's efficiency, we consider there is scope for efficiency adjustments to DPI Water's proposed operating expenditure.

In total, relative to DPI Water's proposal, our draft decision is to reduce the operating expenditure allowance for the 2016 determination period by $20.12 million or 9.8%, from $204.72 million to $184.60 million. This reflects:

- Synergies' bottom-up assessment of the cost of water-sharing plan activities ($5.0 million adjustment) and systems operation and water availability management activities ($5.2 million adjustment).
- Synergies' recommendation for a general 5% efficiency adjustment (totalling $7.9 million) to remaining operating expenditure, based on the identification of systemic issues relating to DPI Water's past and projected performance and the scope for general efficiency gains.
- Exclusion of 25% of DPI Water's costs of Metropolitan Water Plans, which is based on our estimate of the costs of activities that are not monopoly services ($2.1 million adjustment).

These adjustments are outlined below.

Water plan development (W06-01 and W06-02)

We accept Synergies' recommendation to reduce the cost of water sharing plan development. This amounts to a $5.0 million reduction to DPI Water's proposed operating expenditure over the 2016 determination period. Synergies' bottom-up assessment showed DPI Water's efficiency is declining, based on its delayed completion of reviewing water sharing plans, and relatively high unit cost per review.

Synergies expressed concerns about the two-year delay (from 2014 to 2016) in delivering 31 water plan reviews, which has imposed additional costs on users. These reviews were scheduled to be completed by 2014, but were delayed to 2016, which has resulted in $14 million in additional costs being incurred for this activity.[42]

In addition, external benchmarking indicates that DPI Water's proposed costs are relatively high compared with the costs of the Department of Natural Resources and Mines in Queensland. Synergies estimated that DPI Water's average cost per review is $0.75 million, which is towards the upper range of the costs in Queensland for changing water plans ($0.11 million for 'minor changes' to $0.86 million for 'major changes').[43] The average cost per review is also a substantial increase compared with the 2011 determination period ($0.58 million per review); particularly considering the proposed workload is for reviewing plans, rather than developing new ones as in the previous determination period.

42 Synergies Final Report, January 2016, p 89.
43 Synergies Final Report, January 2016, p 90.

System operation and water availability management (W05-01)

We accept Synergies' recommendation to reduce the cost of system operation and water availability management from $3.8 million to $2.5 million per year. This adjustment amounts to $5.2 million in total over the 2016 determination period.

Synergies identified that the proposed expenditure for this activity increased significantly compared with the previous IPART-determined expenditure level of around $2.5 million per year, without any clear reason.[44] It also found DPI Water misreported the costs associated with this activity between 2011-12 and 2013-14. Synergies stated that this shortcoming indicates the lack of strict budgetary controls. Given this, and the lack of evidence supporting the increase, it recommended a reduction to DPI Water's forecast expenditure on this activity of around $1.3 million per year.

Systemic issues with DPI Water's performance and efficiency benchmarking

We accept Synergies' recommendation for a general 5% efficiency adjustment to DPI Water's remaining operating expenditure allowance due to systemic issues it identified with DPI Water's management of costs, and based on the benchmarking it conducted of some of DPI Water's operating costs against comparable organisations.[45] This 5% efficiency adjustment amounts to a $7.9 million reduction in DPI Water's proposed operating expenditure over the 2016 determination period.

Synergies noted DPI Water's actual operating expenditure between 2011-12 and 2013-14 was $13.9 million or around 7% above IPART's 2011 determination allowance (as shown in Figure 4.1 above).[46] In addition, Synergies identified issues with DPI Water's cost estimates and management of costs:

- misallocation of costs to activity codes
- use of external funding, which has resulted in over-recovery of compliance and enforcement costs
- higher-than-forecast levels of service - eg, enhanced on-line telemetry services for surface water quantity monitoring, and
- changes in priorities between planned and actual expenditure, arising from strategic adjustments.

For example, Synergies' assessment of compliance and enforcement activities showed Commonwealth funding was used for these activities, which has led to over-recovery of costs.[47] Further, DPI Water has not provided sufficient cost-benefit analysis justifying the proposed strategy to audit 2% of licence holders per year, given the high level of compliance that is observable.

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44 Synergies Final Report, January 2016, pp 102-104.
45 Synergies Final Report, January 2016, p 113.
46 Synergies Final Report, January 2016, p 106.
47 Synergies Final Report, January 2016, pp 97-99.

Synergies' top-down assessment of efficiency suggests that DPI Water's overhead costs are higher than other government departments of a similar size, which suggests scope for efficiency adjustments. It benchmarked DPI Water's corporate services (overhead) costs using a PwC report on Commonwealth and State Government agencies, and found DPI Water's overhead costs are around 20% of operating costs, compared with 7% to 14% for its peer group. This is further reinforced by the magnitude of the savings arising from the bottom-up assessments on water sharing plans, and systems operation and water availability management (see above).

Overall, Synergies considers that a 5% efficiency adjustment is appropriate for the remaining operating expenditure, given the systemic issues and potential scope of efficiency savings it identified.[48]

Metropolitan Water Plans (W06-05)

As discussed in Chapter 3, we recommended removing 25% of the cost of the Metropolitan Water Directorate's development of the Metropolitan Water Plan, as we consider these costs do not relate to WAMC's monopoly activities.

This recommendation reduces the total efficient costs for regional planning and management strategies by $2.1 million over the determination period.

4.2 MDBA and BRC allowance

Draft decisions

4 IPART has accepted DPI Water's proposed allowance for BRC costs, totalling $1.47 million over the 2016 determination period (see Table 4.2).

5 IPART has reduced DPI Water's proposed allowance for MDBA costs by $1.2 million (or 3.2%), from $37.1 million to $35.9 million, over the 2016 determination period (see Table 4.2).

Table 4.2 outlines DPI Water's forecasts for its MDBA and BRC costs, our draft decision and the difference between these figures.

[48] Synergies Final Report, January 2016, p 117.

Table 4.2 IPART's draft decision on DPI Water's BRC and MDBA allowance ($000's $2015-16)

	2016-17	2017-18	2018-19	2019-20	Total
MDBA allowance					
DPI Water's proposal	9,623	9,388	9,159	8,935	37,105
IPART's draft decision	9,313	9,086	8,865	8,648	35,913
Difference	309	302	294	287	1,192
BRC allowance					
DPI Water's proposal	396	364	358	349	1,466
IPART's draft decision	396	364	358	349	1,466

Source: IPART Calculations based on DPI Water's submission, p 177.

In 2011, IPART determined that DPI Water could recover the user share of its forecast contribution to the BRC, but not the proposed full user share of the contribution to the MDBA. IPART allowed $1.69 million ($2009-10) for MDBA expenditure each year to be included in the user share of the notional revenue requirement (compared to the then NOW's proposed user share of $8.8 million per year). This decision was based on our concerns about the efficiency of the forecast MDBA contributions, given the lack of information supporting the proposal at the time.[49]

Since 2013-14, total MDBA contributions have risen from $1.29 million to $10.09 million in 2015-16 ($2015-16).[50] The NSW Government has yet to confirm the contribution to be made to the MDBA for the years after 2015-16.

DPI Water states that the current level of contributions is below historical levels and has conservatively forecast the contributions for 2017-18 to 2019-20 to remain at 2016-17 levels, in nominal terms.[51]

Reasons for our decision

For BRC and MDBA contributions, we consider the costs are reasonable except for two major projects undertaken by the MDBA. We consider the contributions to the Living Murray Initiative and salinity management works should be reduced by 5%, or $1.2 million, over the 2016 determination period. We explain our decision below.

[49] Whilst our decision at the time was based on the user share of the MDBA contributions, our approach for the 2016 determination period is to assess the total MDBA contributions and then adjust the contributions for the appropriate user share. This approach is discussed in more detail in Chapter 7.

[50] DPI Water submission to IPART, September 2015, p 106.

[51] DPI Water submission to IPART, September 2015, p 179.

Dumaresq-Barwon Borders River Commission (BRC)

The main functions of the BRC 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, and
- control the construction, operation and maintenance of works under its remit.

NSW Government contributions to the BRC over the 2011 determination period have been stable. Our expenditure review consultant who examined this issue, Cardno, found that DPI Water has contributed around 9% less to the BRC than what IPART allowed for in the 2011 determination.[52] For the 2016 determination period, Cardno observed a decreasing trend in BRC contributions, totalling 14% in real terms, which indicates that the contributions are being efficiently used.

Murray-Darling Basin Authority

The MDBA undertakes five activities that are funded in part by contributions from DPI Water on behalf of NSW. These are:

- operations of salt interception schemes
- river channel management
- post water management
- hydrometric services, and
- water quality monitoring.

DPI Water has significantly reduced its contribution to the MDBA in 2015-16. The MDBA has stated it has identified revenue requirements for the MDBA program that are not reflected in DPI Water's submission forecasts over the 2016 determination period.[53]

Cardno, on behalf of Synergies, reviewed the efficiency of DPI Water's forecast contributions to the MDBA and (as per its recommendations regarding the BRC) recommended no adjustments be made to the proposed contributions.

However, based on stakeholder concerns on the transparency and efficiency of these contributions, we have undertaken further analysis of DPI Water's forecast contributions to the MDBA.[54]

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52 Cardno, *DPI Water efficiency review – Review of MDBA and BRC contributions*, January 2016, p 10.

53 MDBA submission to IPART Issues Paper on Review of prices for the WAMC, October 2015, pp 1-2.

54 Gwydir Valley Irrigators Association submission to IPART Issues Paper on Review of prices for the WAMC, October 2015, p 5; Murray Irrigation Limited submission to PART Issues Paper on Review of prices for the WAMC, 2016, October 2015, p 2; NSW Irrigators' Council submission to IPART Issues Paper on Review of prices for the WAMC, October 2015, p 13.

Cardno outlined the governance arrangement of the MDBA and stated that:

> …New South Wales has direct oversight over approval of funding of the MDBA through the annual corporate planning process and this is exercised by the Ministerial Council, advised by the Basin Officials Committee.[55]

Although, the NSW Government has direct oversight, we are concerned that the MDBA activities may not subject to a sufficient level of independent review to ensure that the proposed operating expenditure is efficient, and entirely consistent with the 'impactor pays' principle.

We note that DPI Water has identified reviews of programs such as the 'The Living Murray program' and it notes that work on identifying cost efficiencies and improving effectiveness is continuing.[56] The lack of publically available detail on potential efficiencies raised concerns from water users. An expectation that users should contribute to these costs through water management charges should be matched by an appropriate level of transparency and scrutiny.

We consider there is scope for efficiency adjustments for two major projects, The Living Murray and salinity management works, based on the Murray-Darling Basin Ministerial Council's efficiency review of MDBA's functions:[57]

- The Living Murray Initiative is a program that integrates watering of iconic sites in NSW and across the length of the Murray River. The Commonwealth, Victoria and South Australia jointly manage the Living Murray Initiative.
  - In its submission, DPI Water stated the review found that savings could be made through streamlining coordination procedures and adjusting the water entitlement portfolio. In addition, DPI Water is continuing to identify cost efficiencies and effectiveness.[58]
- Salinity management involves water management works to reduce the impacts arising from water use or remediate water courses - eg, riverbank protection works and salt interception schemes.
  - In its submission, DPI Water stated the review found cost savings were achievable by modifying salt interception scheme operations in line with reduced river salinities from Basin Plan environmental flows.[59]

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55 Cardno, DPI Water efficiency review – Review of MDBA and BRC contributions, p 2.

56 DPI Water submission to IPART, September 2015, p 164.

57 The MDB Ministerial Council efficiency review included independent cost efficiency assessments of River Murray Operations, Salinity Management, the Living Murray program, Joint Programs governance and the inter-jurisdictional cost share arrangements. The reviews relevant to our determination are the Salinity Management and the Living Murray program. Source:http://www.mdba.gov.au/publications/research-report/independent-review-efficiency-river-murray-operations.

58 DPI Water submission to IPART, September 2015, p 164.

59 DPI Water submission to IPART, September 2015, p 164.

We note that Synergies' earlier 2014 review of MDBA's operations for the Ministerial Council[60] identified scope for improvements to asset management planning, clearer specification of service standards and improvements to cost forecasts and cost controls.

Therefore, based on Synergies' general assessment of DPI Water's costs and other efficiency reviews for The Living Murray and salinity management activities, we consider that a 5% efficiency adjustment to the cost of these two MDBA projects is appropriate to reflect potential cost-savings.

60 Synergies Economic Consulting, *Building Blocks Model – River Murray Operations*, November 2014, pp 8-9.

5 Prudent and efficient capital expenditure

Under the building block framework, there is no explicit allowance for capital expenditure in the notional revenue requirement. Instead, capital expenditure that we assess as being prudent and efficient is added to the Regulatory Asset Base (RAB) and recovered through the allowances for a **return on assets**[61] and a **return of assets** (or regulatory depreciation).[62]

Only capital expenditure funded by the regulated agency (in this case, this is effectively DPI Water) is included in the RAB. Capital expenditure funded by third parties (eg, through grants), such as the Commonwealth, is not included in the RAB.

In deciding how much capital expenditure is rolled into the RAB, we apply:

- a prudence and efficiency test to actual capital expenditure over the 2011 determination period (past capital expenditure), and
- a prudence and efficiency test to proposed capital expenditure for the 2016 determination period (forecast capital expenditure).

The prudence test assesses whether, in the circumstances that existed at the time, the decision to invest in the asset is one that the agency, acting prudently, would be expected to make. The test assesses both:

- the prudence of how the decision to invest was made, and
- the prudence of how the investment was executed (ie, the construction or delivery of the asset), having regard to information available at the time.

In examining forecast expenditure, the prudence test examines the consistency of expenditure with relevant longer term capital expenditure programs.

The efficiency test examines whether the actual and proposed capital expenditure represents (over the life of the asset) the best way of meeting water users' needs, subject to the agency's regulatory requirements.

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61 The allowance for a return on assets represents our assessment of the opportunity costs of the funds invested in DPI Water's assets.

62 The allowance for a return of assets recognises that through the provision of services, a business's capital infrastructure will wear out over time.

This chapter outlines our draft findings on DPI Water's prudent and efficient capital expenditure over the 2011 and 2016 determination periods.

5.1 Historical capital expenditure

Draft decision

6 IPART's draft decision is to accept DPI Water's historical capital expenditure over the 2011 determination period as shown in Table 5.1.

Table 5.1 Draft decision on DPI Water's historical capital expenditure ($million, $2015-16)

	2011-12	2012-13	2013-14	2014-15	2015-16	Total 2011-2016
IPART Allowed	2.26	2.26	2.26			6.78
Actual capital expenditure	0	3.70	1.09	1.33	1.15	7.28
Synergies' recommended capital expenditure	0	3.70	1.09	1.33	1.15	7.28
IPART's draft decision on prudent & efficient capital expenditure	0	3.70	1.09	1.33	1.15	7.28

Note: Totals may not add due to rounding.

Source: DPI Water 2014-15 AIR, Synergies, *DPI Water expenditure review, Final Report*, January 2016, p 122, and IPART calculations.

Reasons for our decision

To assist our assessment we engaged a consultant, Synergies, to review DPI Water's historical and forecast expenditure.

Synergies found all of DPI Water's capital expenditure over the 2011 determination period to be prudent and efficient, and should be included in the RAB roll forward to the start of the 2016 determination period.

Synergies noted that DPI Water's capital expenditure over 2011-12 to 2013-14 was less than the amount we allowed for when setting prices for this period in the 2011 Determination (see Figure 5.1 below), after taking into account external funding.

In the 2011 Determination, we allowed for capital expenditure related to DPI Water's proposed replacement and refurbishment of its hydrometric station assets. Synergies found that actual expenditure on the hydrometric network was less than allowed, but there was substantial expenditure on new groundwater bores and other items.

The major items of DPI Water's actual capital expenditure were:

- IT/systems related expenditure, including upgrades to systems to manage approvals ($1.30 million).
- Acquisition/upgrade of groundwater sensors and water sampling and monitoring equipment ($0.76 million).
- Hydrometric network expenditure ($1.18 million).[63]

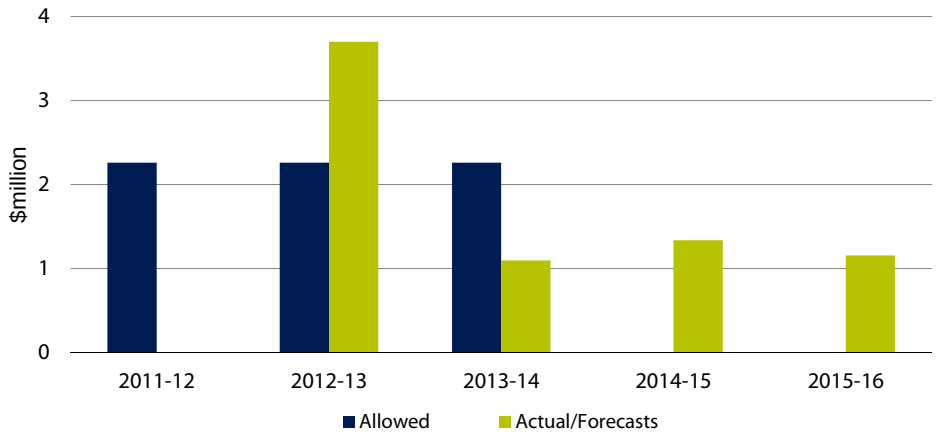
In the 2011 Determination, we set the opening value of DPI Water's (then known as NOW) RAB at zero due to concerns we had about its capital planning and asset management systems.

For the 2016 Determination, Synergies reviewed DPI Water's capital planning and asset management practices. It found that:

> In broad terms, most of the expenditure appears efficient, on the basis that DPI Water has improved its capital planning and asset management practices since 2011, however there is still some scope for improvement…[64]

Synergies also examined one specific capital project in detail, the Hydrometric Network Expansion Project, which was one of the major items of capital expenditure over the period. Synergies were satisfied that the expenditure on this project was prudent and efficient.[65]

Figure 5.1 Capital expenditure, allowed versus actuals ($million, $2015-16)



Note: There are no allowed figures for 2014-15 and 2015-16 as the 2011 Determination was scheduled to run until 30 June 2014. DPI Water subsequently requested, and received, one-year deferrals of IPART's determination for both 2014-15 and 2015-16. As a result, the new determination commences from 1 July 2016.
Source: IPART, Review of Prices for the Water Administration Ministerial Corporation, Determination and Final Report, February 2011, p 68 and 71, DPI Water 2014-15 AIR, and IPART calculations.

63 Synergies Final Report, January 2016, p 121.
64 Synergies Final Report, January 2016, p 121.
65 Synergies Final Report, January 2016, p 121 and Appendix C, p 8.

5.2 Forecast capital expenditure

Draft decision

7 IPART's draft decision on forecast capital expenditure over the 2016 determination period is listed in Table 5.2.

– We have accepted Synergies' recommendation to reduce DPI Water's proposed capital expenditure by a total of $1.9 million over the 2016 determination period.

DPI Water proposed $15.43 million in total capital expenditure over 2016-17 to 2019-20. This figure is net of external funding. We have reduced this by $1.9 million, consistent with the recommendation of Synergies. The allowed capital expenditure over the 2016 determination period is $13.53 million.

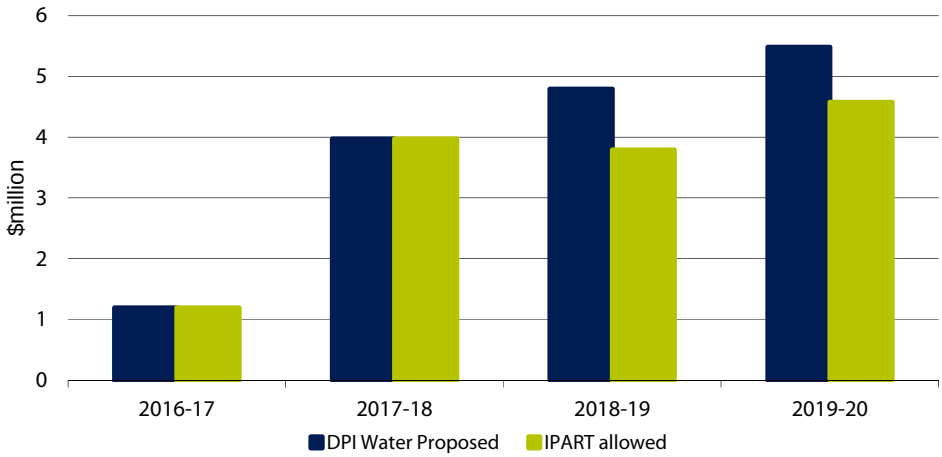
Table 5.2 Proposed and recommended total capex ($million, $2015-16)

	2016-17	2017-18	2018-19	2019-20	Total 2016-2020
Proposed total capex	3.78	5.43	5.22	5.53	19.95
Less third party	-0.14	-0.46	-0.43	-0.48	-1.07
Less Grants	-2.45	-1.00	0.00	0.00	-3.45
Proposed net capex	**1.19**	**3.97**	**4.79**	**5.48**	**15.43**
Synergies Adjustment	0.00	0.00	-1.00	-0.91	-1.91
Synergies recommended	**1.19**	**3.97**	**3.79**	**4.58**	**13.53**
IPART's draft decision	**1.19**	**3.97**	**3.79**	**4.58**	**13.53**

Source: DPI Water submission to IPART, September 2015, p 181, and Synergies, *DPI Water expenditure review, Final Report,* 13 January 2016, p 13.

DPI Water's proposed capital expenditure and our allowed capital expenditure over the 2016 determination period are shown in Figure 5.2.

Figure 5.2 Forecast capital expenditure, DPI Water proposed and draft IPART allowed ($million, $2015-16)



Source: DPI Water submission to IPART, September 2015, p 181.

Reasons for our decision

Synergies' assessment of the prudence and efficiency of forecast capital expenditure involved detailed reviews of the largest two projects proposed by DPI Water (refurbishment of the groundwater monitoring network and enhancements to the Water Access Licences system, which together comprised 97% of capital expenditure in the forecast period).[66]

Synergies commented that these projects have not yet reached a stage of development at which firm findings can be made about their prudence and efficiency, and that DPI Water will need to justify these projects ex-post at the next review. However, in relation to the groundwater project, Synergies noted that DPI Water's forecast expenditure for replacement and renewals represents just 5% of the network's replacement value, which is a relatively small amount compared to the replacement value of these assets.[67]

Synergies considered it unlikely that the proposed groundwater project can be delivered in the proposed timeframes and recommended shifting the cost profile out by one year, to reflect the high likelihood of a delay.[68] This resulted in a $1.9 million (12%) recommended adjustment to the allowed capital expenditure over the 4-year determination period.[69]

66 Synergies Final Report, January 2016, p 122.
67 Synergies Final Report, January 2016, p 12.
68 Synergies Final Report, January 2016, p 124.
69 Synergies Final Report, January 2016, pp 12-13, and IPART calculations.

We consider that Synergies' findings are reasonable and reflect an efficient capital expenditure program that is likely to be achievable over the 2016 Determination. We have therefore accepted its recommendations in our draft decision.

Relative to DPI Water's proposal, this will lower the amount allowed into DPI Water's RAB for the 2016 determination period – which will result in lower prices.

6 Return on assets, regulatory depreciation and taxation

In addition to operating expenditure allowances, the building block model includes allowances for a return on DPI Water's assets, regulatory depreciation (or a return of its assets), taxation and working capital.

To calculate the allowances for these components we need to determine three key inputs:

- the value of DPI Water's regulatory asset base (RAB), which represents the economic value of the assets used to deliver the monopoly services
  - this involves setting appropriate asset lives and the depreciation method to apply to DPI Water's RAB
- the appropriate rate of return (the weighted average cost of capital - WACC) on the RAB, and
- the appropriate amount of working capital to meet cash flow obligations.

The following sections set out our draft decisions for these components of the building block model for DPI Water.

6.1 Establishing the value of the Regulatory Asset Base

Draft decision

8 IPART has set DPI Water's opening Regulatory Asset Base at the commencement of the determination period (1 July 2016) at $6.30 million (Table 6.2).

To calculate the return on assets and regulatory depreciation for the 2016 Determination, DPI Water's opening RAB needs to be determined as at 1 July 2016.

In general, to determine the value of the RAB over the 2016 determination period, we:

- Take the RAB value we determined at the start of the 2011 period (the opening RAB), incorporate DPI Water's prudent and efficient actual capital expenditure over the 2011 determination period, and make adjustments to account for other changes to the RAB over the period (eg, asset disposals, capital contributions, allowed regulatory depreciation and annual indexation), as shown in Table 6.1. This determines the opening RAB for the 2016 determination period.
- Roll forward this opening RAB to the end of the 2016 determination period by including prudent and efficient forecast capital expenditure over the period (discussed in Chapter 5), and making adjustments to account for forecast asset disposals, capital contributions and regulatory depreciation. This sets the RAB for each year of the 2016 determination period (Table 6.2).

Table 6.1 IPART's draft decision on DPI Water's historical RAB roll forward ($'000, $nominal)

	2011-12	2012-13	2013-14	2014-15	2015-16
Opening RAB	**0**	**-51**	**3,284**	**4,176**	**5,277**
Plus: Capital expenditure	0	3,453	1,050	1,300	1,152
Less: Asset disposals	0	0	0	0	0
Less: Allowed regulatory depreciation	51	158	271	271	271
Plus: Indexation	0	40	114	72	146
Closing RAB	**-51**	**3,284**	**4,176**	**5,277**	**6,304**

Note: In nominal terms, total capital expenditure is $6.95 million, in $2015-16 terms, the value is $7.28 million.
Source: IPART calculations.

Table 6.2 IPART's draft decision on DPI Water's forecast RAB roll forward ($'000, $2015-16)

	2016-17	2017-18	2018-19	2019-20
Opening RAB	**6,304**	**6,890**	**10,070**	**12,809**
Plus: Capital expenditure	1,191	3,972	3,789	4,575
Less: Asset disposals	0	0	0	0
Less: Regulatory depreciation	605	792	1,050	1,304
Closing RAB	**6,890**	**10,070**	**12,809**	**16,080**

Source: IPART calculations.

We have set the opening RAB using C-codes up to 2015-16, and W-codes for the 2016 determination period (2016-17 to 2019-20).

DPI Water has not identified any asset disposals since the beginning of the 2011 Determination.

Capital contributions include government grants, assets-free-of-charge (AFOC)[70] and third party cash contributions. For DPI Water, these include grants from the Commonwealth Government for the replacement of water models to assess water take impacts. In establishing the value of the RAB, we deduct the capital contributions, so customers do not pay for capital expenditure that DPI Water did not fund.

The capital expenditure rolled into the RAB for the 2016 Determination does not include any capital funded by cash contributions or grants.

Reasons for our decision

In the 2011 Determination, we decided to set the opening value of DPI Water's RAB at zero. This reflected our view that, given the deficiencies of DPI Water's capital planning and asset management systems at the time, we could not confidently quantify the prudent and efficient value of the existing asset base.[71]

Setting the opening value of the RAB at zero meant that DPI Water did not earn a return on or receive a depreciation allowance for its capital investments made prior to 1 July 2011.[72]

We have incorporated DPI Water's prudent and efficient actual nominal capital expenditure of $6.95 million ($nominal) or $7.28 million ($2015-16) over the period 2011-12 to 2015-16, as shown in Table 6.1.

Our assessment of DPI Water's actual and forecast capital expenditure is discussed in Chapter 5.

DPI Water has used its proposed W-code user shares to calculate the user share of the opening RAB as at 1 July 2016. However, this is not consistent with IPART's 2011 Determination, as it does not accurately reflect how IPART determined capital expenditure should be allocated between users and the Government over the 2011 determination period. We have therefore used C-codes to roll forward the RAB up to 30 June 2016, before changing to the new W-codes from 2016-17 onwards.

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70 Note that AFOC is not deducted from the RAB, see IPART, *The incorporation of company tax in pricing determinations – Final Decision*, December 2011, p 15.

71 IPART, *Review of prices for the Water Administration Ministerial Corporation – Determination and Final Report*, February 2011, p 71.

72 IPART, *Review of prices for the Water Administration Ministerial Corporation – Determination and Final Report*, February 2011, p 71.

6.2 Return on assets

Draft decision

9 IPART has applied a post-tax real WACC of 4.8% to calculate the return on DPI Water's assets. This would generate a return on assets of $2.04 million over the 2016 determination period (Table 6.3).

An allowance for a return on assets represents the opportunity cost of the funds invested in DPI Water. We calculate the allowance for a return on capital by multiplying the rate of return, Weighted Average Cost of Capital (WACC), by the value of the RAB in each year of the determination period.

Table 6.3 IPART's draft decision on DPI Water's return on assets ($'000, $2015-16)

	2016-17	2017-18	2018-19	2019-20	Total
Return on assets	329	423	571	721	2,043

We determined the rate of return for our Draft Determination using our standard methodology. Appendix C provides detail on how we estimated the WACC for DPI Water.

Reasons for our decision

DPI Water proposed to apply a WACC, consistent with the National Water Initiative's pricing principles for full-cost recovery.[73] Several stakeholders argued that DPI Water should not earn a return on capital.[74]

We consider that it is important to include a rate of return in DPI Water's prices to ensure that the opportunity cost of capital is reflected in prices. In turn, this is important for ensuring that prices are cost-reflective and provide signals for the efficient use and allocation of resources.

The Government must allocate its scarce capital funds across many agencies and priorities. It is important to ensure that the opportunity cost of Government equity is reflected in the prices charged by agencies such as DPI Water, to recover the costs of delivering services to beneficiaries.

We are mindful 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. In 2010, COAG agreed to the principles for the recovery of capital

73 DPI Water submission to IPART, September 2015, p 192.

74 For example, NSW Irrigators' Council submission to IPART Issues Paper on Review of prices for the Water Administration Ministerial Corporation for the NSW Office of Water – from 1 July 2016, October 2015, p 14.

expenditure contained in the National Water Initiative Pricing Principles, which include requirements related to the recovery of a return on capital.[75]

6.3 Return on working capital allowance

Draft decision

10 IPART has set the return on working capital at $1.94 million over the 2016 determination period (Table 6.4).

The working capital component of our building block approach represents how much cash-at-bank is necessary for the regulated entity to meet its cash flow obligations. If timing assumptions used in setting the price are inconsistent with the recovery of revenue, an under or over recovery of working capital may occur. DPI Water forecast a return on working capital of $0.43 million over the 2016 determination period.[76]

Table 6.4 IPART's draft decision on DPI Water's return on working capital ($'000, $2015-16)

	2016-17	2017-18	2018-19	2019-20	Total
Return on working capital	495	487	486	475	**1,944**

Reasons for our decision

We consider that the notional revenue requirement (NRR) should reflect as far as possible the revenue timing conditions faced by a monopoly service provider.

To achieve this, on the basis that customers are billed quarterly, IPART usually discounts the capital component of the NRR (return-on and return-of assets, and return-on working capital) to mid-year values. Mid-year discounting of the capital component of the NRR results in a mid-year price. A mid-year price leads to an over recovery for the first half of the year, an under recovery for the remainder of the year, and a fair return-on assets.

IPART has a standard set of working capital assumptions based on quarterly billing, which are consistent with the mid-year pricing approach. However, DPI Water has informed IPART that customers are billed on a different basis:

- a quarterly basis for regulated rivers, and
- an annual (end-of-year) basis for unregulated rivers and groundwater.[77]

75 National Water Initiative, Council of Australian Government National Water Initiative Pricing Principles, April 2010, p 4.
76 DPI Water submission to IPART, September 2015, p 185.
77 DPI Water email to IPART, 13 January 2016.

Therefore, we have adopted alternative assumptions for all unregulated river and groundwater water sources to obtain prices which reflect the timing of revenue recovery for these services. The assumptions employed in determining working capital are presented in Table 6.5. Using these assumptions, we estimate the return on working capital is around $0.49 million per year, or $1.94 million over the determination period.

Table 6.5 Revenue timing and working capital assumptions

	Regulated	Unregulated	Groundwater
NRR and Price Basis	Mid-year	End-of-Year	End-of-Year
Working Capital assumptions			
Receivables (days)	45	180	180
Inventory (days)	1	1	1
Payable (days)	30	30	30

6.4 Regulatory depreciation

Draft decision

11 IPART has set regulatory depreciation at $3.71 million over the 2016 determination period (Table 6.6).

The allowance for regulatory depreciation included in the revenue requirement is intended to ensure that the capital the regulated business owner invests in the regulatory assets is returned over the useful life of each asset.

Regulatory depreciation depends on the opening RAB, level of capex, asset disposals, the expected or assumed life of assets, and the depreciation method used.

Table 6.6 IPART's draft decision on DPI Water's allowance for regulatory depreciation ($'000, $2015-16)

	2016-17	2017-18	2018-19	2019-20	Total
Regulatory depreciation	597	783	1,038	1,290	3,708

Reasons for our decision

For this determination, we have used the straight-line depreciation method to calculate DPI Water's regulatory depreciation (return of capital) allowance. This means that the values of assets are recovered evenly over their assumed lives.

DPI Water adopted asset lives for new assets used by the Department of Industry for financial reporting (Table 6.7) for estimating depreciation.[78]

78 DPI Water submission to IPART, September 2015, p 326.

Table 6.7 Asset lives for new assets adopted by DPI Water (years)

Asset type	Asset life
Buildings	40
Infrastructure	20
Business and computing equipment	4
Laboratory and specialised equipment	7
Furniture and fittings, and intangibles	10
Motor vehicles and marine vessels	7
Trailers and caravans	10

Source: DPI Water submission to IPART, September 2015, p 326.

We consider the asset lives adopted by DPI Water for estimating depreciation are reasonable and have applied these asset lives in calculating DPI Water's depreciation allowance. Our expenditure review consultant, Synergies, stated that there is no strong reason to recommend changes to DPI Water's adopted asset lives because capital costs represent a small contribution to user prices, and the adopted asset lives are broadly reasonable.[79]

6.5 Tax allowance

Draft decisions

12 IPART has included a tax allowance of $0.27 million over the determination period for DPI Water's taxable income for its monopoly services, as shown in Table 6.8.

13 IPART has not included DPI Water's government cash grants and contributions in calculating the tax allowance.

As discussed above, because we use a post-tax WACC to estimate the allowance for a return on assets in the notional revenue requirement, we also include an explicit allowance for tax, which reflects the regulatory tax liabilities of the regulated business.

Table 6.8 IPART's draft decision on DPI Water's tax allowance ($'000, $2015-16)

	2016-17	2017-18	2018-19	2019-20	Total
Tax allowance	48	57	72	89	267

Note: Total may not add due to rounding.

[79] Synergies Final Report, January 2016, pp 124-125.

Reasons for our decisions

The inclusion of a tax allowance is consistent with the post-tax building block framework and meets IPART's principle that a regulated entity's revenue should be as close as possible to that of a well-managed privately owned business, operating in a competitive market.[80] This includes any taxes payable on the entities' taxable income.

The inclusion of a tax allowance is also consistent with the NWI's pricing principles, which explicitly allows for the recovery of "taxes or tax equivalents" in setting prices for monopoly services.[81] We note that in NSW, it is a matter for the NSW Treasury to decide which agencies and organisations are subject to tax equivalent regimes, as part of the NSW Commercial Policy Framework.

A regulated entity can receive cash contributions from third parties toward its capital expenditure, which may have implications for our tax allowance calculation. Under current ATO rules[82], a regulated entity is required to pay tax on cash contributions and grants.

In previous price reviews, IPART removed the cash contributions from the capital expenditure profile before it is added to the RAB, and included the cash contributions in the tax allowance calculation. The intent of the approach was to ensure that customers did not pay for a return on assets or regulatory depreciation for capital expenditure that the agency has not funded. An adverse impact of this approach is that it inappropriately converts (or liquidates) a proportion of the RAB into cash via the tax allowance calculation.

For the current price reviews, IPART has decided to implement a more direct approach. This approach involves deducting only the cash contribution amount **net of tax** (eg, 70%) from the capital expenditure allowance used to roll forward the RAB (and determine the NRR), and not including the cash contribution in the tax allowance calculation. The remaining cash contribution (eg, 30%) in the RAB covers the tax liability incurred under the current ATO rules for the cash contributions. Where appropriate, the tax rate used would be the corporate tax rate of 30% (to match the actual liability of that contribution).

IPART considers that this approach does not contravene our current policy,[83] which states:

> … where tax effects were already accounted for, then, for the assessment of regulatory tax, these contributions should not be included as capital contributions...

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80 IPART, *The incorporation of company tax in pricing determinations – Final Decision*, December 2011, p 5.

81 Department of Environment, *National Water Initiative Pricing Principles* – Appendix A: COAG *Water Resource Pricing Principles*, April 2010, p 18.

82 Section 21A *Income Tax Assessment Act 1936*.

83 IPART, *The incorporation of company tax in pricing determinations – Final Decision*, December 2011, p 16.

The treatment of assets-free-of-charge is not affected for RAB roll-forward and tax allowance calculation purposes, as a result of adopting this more direct approach to the treatment of cash contributions.[84] Regardless, DPI Water did not forecast any assets-free-of-charge over the 2016 determination period.

We consider that for the capital related cash contributions received by DPI Water, the appropriate tax rate for this determination is 0%. DPI Water also received grants towards operating expenditure, and we consider the appropriate tax rate for these grants is also 0%. If DPI Water was subject to the NSW Commercial Policy Framework, the corporate tax rate may apply to both capital and operating related grants and contributions for the purpose of calculating DPI Water's tax allowance.

The total value of all government grants and contributions identified in DPI Water's proposal is $29.45 million in 2016-17 and declines to $7.46 million in 2019-20.[85] We estimate that the inclusion of these contributions in the tax allowance would increase the tax allowance by $8.73 million in 2016-17 and $2.28 million in 2019-20, as shown in Table 6.9. Over the 2016 determination period, the total tax allowance would have increased by a further $16.91 million or 7.4% of the notional revenue requirement.

Table 6.9 Impact of including DPI Water's government grants and cash contributions in the tax allowance ($'000, $2015-16)

	2016-17	2017-18	2018-19	2019-20	Total
Operating expenditure					
Commonwealth grants	26,869	10,529	8,639	7,416	53,453
Capital expenditure					
Third party	135	457	425	48	1,065
Grants	2,450	1,000	0	0	3,450
Total grants and cash contributions	**29,454**	**11,986**	**9,064**	**7,464**	**57,968**
Impact on tax allowance	**8,732**	**3,572**	**2,325**	**2,279**	**16,908**

Source: IPART calculations and DPI Water submission to IPART, September 2015.

Given the potential implications on competitive neutrality, we recommend the NSW Treasury clarifies whether DPI Water is subject to the tax equivalents regime in the NSW Commercial Policy Framework.

[84] Under IPART's building block framework, assets-free-of-charge are excluded from the RAB given that the regulated entity has not made any direct investment. However, the regulated entity will incur a tax liability under the ATO rules for assets-free-of-charge, and the tax allowance calculation takes this into consideration.

[85] DPI Water submission to IPART, September 2015, pp 174, 181.

7 DPI Water's total efficient costs, user share and its allocation across water sources

We established the components of the building block to determine DPI Water's **total efficient costs**, comprising:

- an allowance for efficient operating expenditure[86] ($184.6 million over the 4-year determination period, see Chapter 4)
- an allowance for a return on the regulatory asset base ($2.0 million over the 4-year determination period, see Chapter 6)
- allowances for a return of assets (regulatory depreciation of $3.7 million), tax obligations ($0.3 million), and a return on working capital ($1.9 million, over the 4-year determination period, see Chapter 6), and
- allowances for efficient contributions to the MDBA ($35.9 million over the 4-year determination period) and the BRC ($1.5 million over the 4-year determination period, see Chapter 4).

The sum of these components constitutes our assessment of DPI Water's total efficient costs over the determination period, or its notional revenue requirement (NRR).

Once established, we allocate total efficient costs between users and the Government (on behalf of broader community), using the 'impactor pays' principle.

The user share of total efficient costs is then allocated to 'water sources', defined as the combination of water type (ie, regulated rivers, unregulated rivers and groundwater) and geographic location (ie, valley or region). We then set water management prices for each water source, to recover the user share of notional revenue requirement (NRR), allocated to that water source.

The following sections summarises our decisions on DPI Water's **total efficient costs (or NRR)**, the **user share of these costs**, and the **allocation of user share of costs across water sources**.

86 Excluding MDBA and BRC contributions, see Chapter 2 for detail.

7.1 Notional revenue requirement

Draft decision

14 IPART's draft decision on DPI Water's notional revenue requirement (NRR) for its monopoly water management services is shown in Table 7.1. This totals $229.9 million over the 2016 determination period.

Table 7.1 IPART's draft decision on DPI Water's notional revenue requirement ($'000, $2015-16)

Component	2016-17	2017-18	2018-19	2019-20	Total
Forecast efficient operating expenditure	46,989	46,835	46,045	44,735	184,604
Allowance for forecast contributions to MDBA	9,313	9,086	8,865	8,648	35,912
Allowance for forecast contributions to BRC	396	364	358	349	1,467
Allowance for return on assets	329	423	571	721	2,044
Allowance for regulatory depreciation	597	783	1,038	1,290	3,708
Allowance for return on working capital	495	487	486	475	1,943
Allowance for taxation	48	57	72	89	266
Total notional revenue requirement	**58,168**	**58,035**	**57,435**	**56,308**	**229,944**

Note: The sum of the individual components/years may not add to the total notional requirement due to rounding.

Source: IPART Calculations.

Our draft decision on DPI Water's NRR reflects our decisions that:

- the opening value of DPI Water's RAB in 2016-17 is $6.3 million (Chapter 6)
- an appropriate post-tax real WACC for DPI Water over the determination period is 4.8% per year (Chapter 6)
- the straight-line depreciation method is appropriate for calculating the regulatory depreciation allowance (Chapter 6)
- to ensure consistency between the timing assumptions in setting prices and the recovery of revenue, the NRR and prices are modelled:
  - for regulated rivers water sources, on the basis of a quarterly billing cycle, and
  - for unregulated rivers water sources and groundwater sources, on the basis of an annual (end-of-year) billing cycle (Chapter 6), and
- a tax allowance, consistent with IPART's and the NWI's pricing principles, is appropriate (Chapter 6).

7.1.1 Reasons for our decision

Our draft decision represents a **$20.2 million** or 8.1% reduction to DPI Water's proposed notional revenue requirement (NRR) over the 2016 determination period.

This outcome is driven by:

- **changes to building block inputs**, ie:
  - a $20.1 million reduction to operating expenditure over the 4-year determination period, including:
    - $2.1 million considered as out-of-scope, and
    - a $18.1 million efficiency adjustment[87] (see Chapter 4)
  - a $1.2 million reduction to MDBA expenditure (see Chapter 4)
  - a $1.9 million reduction to capital expenditure (see Chapter 5)
  - an increase in the post-tax WACC from 4.6% (DPI Water's proposal) to 4.8% (IPART's draft decision), and
- **adjustments to the pricing model**, ie:
  - setting prices to reflect the timing of revenue collection (see Chapter 6), and
  - providing for a tax allowance (see Chapter 6).

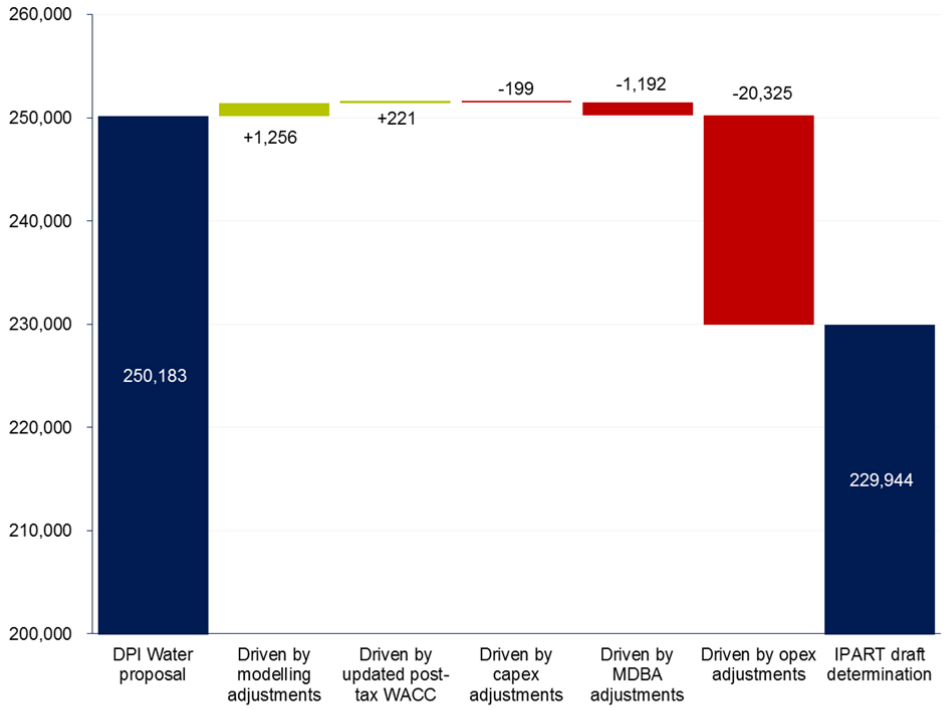
Our proposed $20.2 million reduction in DPI Water's NRR over the 2016 determination period is comprised of:

- a $20.3 million reduction from the reduction to operating expenditure (a $20.1 million direct reduction in operating expenditure and a $0.2 million flow-on indirect effect through the model)
- a $1.2 million reduction from the reduction to MDBA expenditure
- a $0.2 million reduction from the reduction to capital expenditure
- a $1.3 million increase from modelling adjustments, and
- a $0.2 million increase from increasing the post-tax WACC from 4.6% (DPI Water's proposal) to 4.8%.[88]

A summary of our adjustments to DPI Water's notional revenue requirement is presented in Figure 7.1 below.

87 Numbers might not add up due to rounding.
88 Numbers might not add up due to rounding.

Figure 7.1 Summary of IPART's draft adjustments to DPI Water's notional revenue requirement (2016-17 to 2019-20) ($'000, $2015-16)



Source: IPART Calculations. Bar size is not to scale.

7.2 User share of DPI Water's total efficient costs

Draft decision

15 IPART's draft decision is to accept DPI Water's proposed 72% user share of costs, consistent with the impactor pays principle. This means the user share of DPI Water's total efficient costs (to be recovered through water management charges) is $166.1 million over the 2016 determination period (see Table 7.2).

Table 7.2 IPART's draft decision on user share of DPI Water's notional revenue requirement ($'000, $2015-16)

	2016-17	2017-18	2018-19	2019-20	Total over 4-year determination period
Total user share	41,905	41,840	41,517	40,804	**166,066**
	72%	72%	72%	72%	**72%**

Source: IPART Calculations. Includes the user share of MDBA and BRC contributions.

This draft decision reflects our findings that:

- DPI Water's proposed user shares, as a percentage of costs by activity code, are appropriate.
- DPI Water's proposed user shares for its contributions to the MDBA and BRC are appropriate.

7.2.1 Reasons for our decision

As discussed below, we consider that DPI Water's proposed user shares of its W-codes (on a percentage basis) are reasonable and consistent with the impactor pays principle.

In their submissions to the Issues Paper, irrigation organisations were concerned that DPI Water had attempted to shift costs by moving activities from codes with a low user share to those with higher user shares.

Other submissions argued that other users of DPI Water's services were not being captured. For example, NSW Irrigators Council argued:

- A review of the current cost share proportions is necessary, with consideration of a more appropriate user base.[89]
- DPI Water is trying to move costs from codes with lower user shares to codes with higher user shares by bundling cost shares.[90]

The impactor pays principle and the 2011 Determination

In the 2011 Determination, DPI Water's monopoly services were categorised in C-codes (11 groups containing 36 activities). For each C-code activity, we allocated costs between users (to be recovered via water management charges) and the Government (on behalf of the broader community), based on the impactor pays principle. Under this principle, costs are allocated according to which of these two parties created the cost, or the need to incur the cost.

Under our 2011 Determination, 59% of DPI Water's notional revenue requirement was allocated to users, compared to DPI Water's proposed user share of 70%.[91] The lower user share in 2011 was due in large part to our decision to include only a part of the proposed user share of MDBA costs in the NRR.[92]

89 NSW Irrigators Council submission to IPART, 16 October 2015, p 6.
90 NSW Irrigators Council submission to IPART, 16 October 2015, p 12.
91 IPART, *Review of Prices for the Water Administration Ministerial Corporation - Final Report*, February 2011, p 12.
92 IPART, *Review of Prices for the Water Administration Ministerial Corporation - Final Report*, February 2011, pp 83-84.

User shares proposed for 2016 Determination

For the 2016 determination period, DPI Water proposed a revised schedule of activities in W-codes (10 groups containing 33 activities) (see Chapter 3 and Appendix B for mapping between C-codes and W-codes). DPI Water's proposed user share of costs was on average $45.3 million per year over the 4-year determination period.[93]

This change required DPI Water to propose user shares for the new W-codes. Where the new W-codes aligned directly with old C-codes, DPI Water generally maintained the same user share. Where the new W-codes were a combination of old C-codes or were resulting from a split of a C-code activity into several groups, DPI Water relied on the user shares from the 2011 Determination and applied the 'impactor pays' principles to establish appropriate user shares for the revised activities. DPI Water engaged a consultant, The Centre for International Economics (CIE), to assist in developing the proposed user shares.[94]

Synergies review

Our Consultant, Synergies, reviewed DPI Water's proposed user shares for the 2016 determination period. Synergies found that with the exception of four activities,[95] all were assigned the expected user shares (that is, user shares calculated using the expenditure-weighted average methodology).[96] The four activities for which DPI Water's proposed user shares did not match the expected outcome are outlined below in Table 7.3.

Table 7.3 Comparison of proposed and calculated user shares with significant difference

	W02-02	W04-03	W06-03	W06-04
DPI Water's proposed user shares	100%	50/100%[a]	0%	0%
Expected user shares based on C-code user shares	78%	100%	70%	70%

[a] For activity W04-03 (Water resource accounting), DPI Water proposed a user share of 100% in its submission and a user share of 50% in their information returns.

Source: DPI Water submission and information returns, Synergies estimates. Synergies derived expected user shares from the 2011 Determination C-code user shares, converted to W-codes using DPI Water's W-code to C-code conversion matrix and weighted according to 2015-16 operating expenditure by activity. For example, if a W-code activity is made up of the whole of one C-code activity with a user share of 100% and 2015-16 operating expenses of $1 million and the whole of a second C-code activity with a user share of 50% and 2015-16 operating expenses of $1 million, a user share of 75% would be expected.

93 Supplementary information provided by DPI Water to IPART on 2 October 2015.

94 DPI Water submission to IPART, September 2015, p 119.

95 These activities are W02-02 Groundwater quality monitoring, W04-03 Water resource accounting and W06-03 and W06-04 Floodplain and drainage management planning, see Synergies Final Report, p 40.

96 For example, activity W02-02 Groundwater quality monitoring is formed from 100% of the previous C02-02 activity, which has a user share of 100% and expenditure of $123,000 in 2015-16, and 9% of the previous C04-01 activity, which has a user share of 50% and expenditure of $1.05 million in 2015-16. Based on these figures, a user share of 78% is expected. However, Synergies ultimately accepted DPI Water's proposed user share of 100%.

Synergies reviewed these four activities and found that DPI Water's proposed user shares were justified and consistent with the impactor pays principle.[97]

For W02-02 *Groundwater quality monitoring*, the higher user share was justified on the basis that the subcomponent of C04-01 *Analysis of water quality* now constituting a part of W02-02, would justify a higher user share than that applied to the old C04-01 code as a whole.

In relation to zero user share assigned to the activities W06-03 and W06-04 (Floodplain and drainage management planning, respectively), these activities resulted as a split of the C-code C07-10 Water sharing plan development, with a user share of 70%. DPI water proposed a 0% share for these activities on the basis that "both these activities are dealing with legacy issues and have significant community benefits." Synergies accepted the justification provided.[98] We have accepted Synergies' recommendation.

Synergies recommended that the proposed user shares for MDBA contributions (55%) and BRC contributions (68%) be accepted on the basis that DPI Water has provided details in its submission on each of the MDBA/BRC activities being funded and individual user shares for each activity, which appear consistent with the impactor pays principle.[99] We accepted Synergies' recommendation.

Our draft decision

We have accepted Synergies' recommendation to accept DPI Water's proposed user shares (as a percentage of each W-code activity), as we consider them to be broadly consistent with the impactor pays principle.

Applying these user shares to our assessment of efficient costs means that our draft decision on user share of DPI Water's total efficient costs over the 4-year determination period is $166.1 million or 72% (compared to 59% at the 2011 Determination). The remaining $63.9 million, or 28%, of DPI Water's total efficient costs is the share funded by the NSW Government (on behalf of the broader community).

The user shares (%) for each activity (in W cost code) are listed in Table 7.4.

97 Synergies Final Report, January 2016, p 40.
98 Synergies Final Report, January 2016, p 40.
99 Synergies Final Report, January 2016, pp 15 and 118-119.

Table 7.4 IPART draft decision on user shares for the 2016 Determination

Activity	User Share (%)	Activity	User Share (%)	Activity	User Share (%)
W01-01	70	W04-02	100	W06-06	75
W01-02	50	W04-03	100	W06-07	50
W01-03	50	W05-01	100	W07-01	50
W01-04	50	W05-02	50	W08-01	100
W01-05	50	W05-03	0	W08-02	100
W02-01	100	W05-04	50	W08-03	100
W02-02	100	W06-01	70	W08-99	100
W02-03	100	W06-02	70	W09-01	100
W03-01	100	W06-03	0	W10-01	100
W03-02	100	W06-04	0	W10-02	70
W04-01	50	W06-05	70	W10-03	100

Source: Synergies Final Report, January 2016, p 41.

7.3 Allocation of user share of costs across water sources

Draft decisions

16 IPART's draft decision is to accept DPI Water's proposed cost drivers to allocate the user share of costs across water sources.

17 IPART's draft decision on the allocation of the user share of costs across water sources is as shown in Table 7.5.

Table 7.5 IPART's draft decision on allocation of DPI Water's user share of NRR costs across water sources ($'000, $2015-16)

Water source	Allocation of user share of costs (2016-17 to 2019-20)	
	$'000	**%**
Regulated rivers		
Border	3,312	2.0%
Gwydir	5,216	3.1%
Namoi	4,007	2.4%
Peel	909	0.5%
Lachlan	5,883	3.5%
Macquarie	6,526	3.9%
Far West	-	-
Murray	20,965	12.6%
Murrumbidgee	21,437	12.9%
North Coast	172	0.1%
Hunter	4,005	2.4%
South Coast	305	0.2%
Sub-total	**72,737**	**43.8%**
Unregulated rivers		
Border	1,174	0.7%
Gwydir	1,025	0.6%
Namoi	2,021	1.2%
Peel	773	0.5%
Lachlan	1,713	1.0%
Macquarie	3,459	2.1%
Far West	5,153	3.1%
Murray	1,220	0.7%
Murrumbidgee	3,244	2.0%
North Coast	9,314	5.6%
Hunter	6,595	4.0%
South Coast	16,710	10.1%
Sub-total	**52,402**	**31.6%**
Groundwater		
Inland	32,962	19.8%
Costal	7,966	4.8%
Sub-total	**40,928**	**24.6%**
Total	**166,066**	**100.0**

Source: IPART Calculations. Includes the user share of MDBA and BRC contributions.

7.3.1 Reasons for our decision

As outlined below, we consider that DPI Water's proposed cost drivers to allocate its user share of costs across water sources are reasonable and the best available.

In their submissions to the Issues Paper, irrigation organisations questioned the transparency of DPI Water's cost allocation model:

- Murray Irrigation argued DPI Water should be required to identify other classes of users and assign a cost share to them.[100]
- Namoi Water stated it was difficult to compare previous costings due to the change in cost codes and lack of explanation for variances to the previous determination.[101]
- Namoi Water did not support the current cost share proportions and requested IPART review the cost sharing.[102]
- Tweed Shire Council argued it should not contribute to many of DPI Water's monopoly services outputs, as it provides many of these outputs itself.[103]

The issue of transparency around costs was also raised at the Tamworth and Sydney public hearings. In these cases:

- Gwydir Valley Irrigators questioned the costs and transparency around establishment of costs related to MDBA activities.[104]
- NSW Irrigators Council requested more transparency around what irrigators pay for MDBA and BRC charges.[105]

In response to stakeholder comments, we have reported on allocation of user share of total efficient costs by water source in our Draft Report (see Table 7.5). The reasoning behind our decision to accept DPI Water's proposed cost drivers is presented below.

The cost allocation process used in the 2011 Determination

DPI Water records actual costs on an activity level basis. The cost of an activity is then allocated to water sources using a cost allocation model.

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100 Murray Irrigation submission to IPART, 9 October 2015, p 4.
101 Namoi Water submission to IPART, 16 October 2015, p 3.
102 Namoi Water submission to IPART, 16 October 2015, p 4.
103 Tweed Shire Council submission to IPART, 23 September 2015, pp 1 -7.
104 IPART, *Transcript of Tamworth Public Hearing for Review of Prices for DPI Water*, 16 November 2015, p 41.
105 IPART, *Transcript of Sydney Public Hearing for Review of Prices for DPI Water*, 23 November 2015, p 13.

The cost allocation process used in the 2011 Determination involved the following three steps:[106]

- Expenditure was recorded under the different cost codes based upon the nature of the activity (eg, 'surface water quantity monitoring').
- Each cost code was assigned a 'cost driver' that represented the key determinant of this expenditure across valleys and water types. For example, the number of water gauging stations was 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 was then apportioned to water sources and valleys by using the relevant cost driver's cost allocation shares.

In the 2011 Determination, we allocated the user share of costs to each water source/valley by using the best available cost drivers, which included:[107]

- entitlement volumes
- number of licences
- number of gauging stations
- number of groundwater bores, and
- water sharing plans in place, in development, and the complexity of implementation of these plans.

Changes to cost allocators proposed for the 2016 Determination

DPI Water proposed, and we have accepted, new cost drivers for the 2016 Determination, to match the new W-codes activities (see Appendix B). We reviewed cost drivers to ensure their appropriateness for allocation of costs for the revised W-code activities. As a result of this review, 10 of the 33 W-code activities have the same cost driver as the C-code activities under the 2011 Determination. The remainder, which include eight new activities, have new or revised cost drivers.[108]

The proposed changes to cost drivers include moving away from using entitlement towards using water take or other specific indicators to allocate the costs of activities. Under DPI Water's proposal, and our draft decision, water take is a cost driver (allocator) for 8 activities, accounting for 26.4% of DPI Water's total cost, either directly or indirectly.[109]

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106 IPART, *Review of Prices for the Water Administration Ministerial Corporation - Final Report*, February 2011, p 112.
107 IPART, *Review of Prices for the Water Administration Ministerial Corporation - Final Report*, February 2011, pp 28 and 329.
108 DPI Water submission to IPART, September 2015, p 6.
109 Synergies Final Report, January 2016, p 61.

This represents a significant shift from the cost allocation model used in the 2011 Determination, where entitlement volume was used as a principal cost driver, allocating costs, either directly or indirectly, of 12 activities, accounting for 34% of total costs.[110] DPI Water's submission proposed that entitlement be used as a cost driver for only two activities.

Table B.2 in Appendix B lists DPI Water's proposed cost drivers (allocators) for the 2016 Draft Determination, by W activity code. For information, Table B.3 in Appendix B provides the leading cost drivers used in the 2011 Determination to allocate C-code expenditure, versus the leading cost drivers used in our Draft 2016 Determination to allocate W-code expenditure.

Synergies review

Synergies reviewed DPI Water's proposed cost drivers and recommended accepting all of them except for total water take.[111]

Synergies found there was only a weak relationship between total water take and DPI Water's cost of service. According to Synergies, adopting water take as a cost driver would also likely introduce greater variability in the cost allocation model (and therefore prices) between regulatory periods. Synergies recommended retaining entitlement volumes as a cost driver in place of the proposed water take, or alternatively using a reliability-weighted form of entitlement to allocate costs.[112]

Our response to Synergies review

In response to Synergies' recommendation on entitlements and water take, we further examined the use of total water take as a cost driver in DPI Water's proposed cost allocation model.

We explored alternative options to water take, including cost drivers used to allocate costs of C-code activities at the 2011 Determination. We have found that:

- there would be technical difficulties associated with reverting to the previous cost drivers (eg, entitlement volumes), because the C-code drivers might no longer be reflective of the proposed W-code activity costs, and
- there were no immediate and feasible alternatives due to data requirements and the need to maintain objectivity and transparency in building the cost driver (and the cost allocation model itself).

[110] Synergies Final Report, January 2016, p 11.
[111] Synergies Final Report, January 2016, p 11.
[112] Synergies Final Report, January 2016, p 11.

In our 2011 Determination, we acknowledged the limitations of using entitlement volume as a cost driver. Our then Consultant, 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 considered that entitlement volume was likely to be the best available indicator/allocator of the Office of Water's costs at that time.[113]

Reliable data on water take in unregulated rivers and groundwater sources was not available at the time of our 2011 Determination.[114] We have established that the quality of DPI Water's forecast water take data has substantially improved since our 2011 Determination (see Chapter 9 for detail). Water take would have been a more appropriate driver for a number of the activities referred to by PwC in the paragraph above.

We have also found that the total water take cost driver uses forecast water take that is averaged over a reasonable period of time.[115] Therefore, the variability of actual water take from year to year will be smoothed, ensuring relatively stability in the cost allocation model.

Synergies suggested retaining the existing set of cost drivers for the eight activities, where costs are allocated through entitlement volumes of unregulated and groundwater sources and through water take for regulated water sources. However, if the costs are indeed more accurately represented by water take rather than entitlement, reverting to using entitlement as a cost driver would result in a misallocation of costs and cross-subsidisation between water sources. Using a sub-optimal cost allocator would be a step back compared to DPI Water's proposal.

Our draft decision

Our draft decision is to accept all cost drivers proposed by DPI Water for the 2016 Determination. We accepted our Consultant's recommendations regarding all cost drivers except for water take. We accepted DPI Water's proposed water take cost driver, on balance, as it likely to be the best available indicator/allocator of DPI Water's costs at this time.

Table 7.6 compares user shares of notional revenue requirement (in percentage and $2015-16) under this draft decision (for the 2016 Determination) to the user share of notional revenue requirement under the 2011 Determination.

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113 IPART, *Review of Prices for the Water Administration Ministerial Corporation - Final Report*, February 2011, p 115.

114 IPART, *Review of Prices for the Water Administration Ministerial Corporation - Final Report*, February 2011, pp 132-133.

115 Up to 20 years for regulated rivers water sources, 3-4 years of extrapolated data for unregulated rivers, and up to eight years for groundwater. See Chapter 9 for detail.

Table 7.6 IPART's decision on user share of NRR by pricing water source, total over 2011 Determination vs draft total over 2016 Determination ($'000, $2015-16)

Water source	Average over 2011 Determination (2011-12 to 2013-14)		Average over Draft 2016 Determination (2016-17 to 2019-20)	
Regulated Rivers				
01.Border	910	1.9%	828	2.0%
02.Gwydir	1,058	2.3%	1,304	3.1%
03.Namoi	1,067	2.3%	1,002	2.4%
04.Peel	252	0.5%	227	0.5%
05.Lachlan	2,186	4.7%	1,471	3.5%
06.Macquarie	1,972	4.2%	1,631	3.9%
08.Murray	5,194	11.1%	5,241	12.6%
09.Murrumbidgee	4,825	10.3%	5,359	12.9%
10.North Coast	77	0.2%	43	0.1%
11.Hunter	1,492	3.2%	1,001	2.4%
12.South Coast	133	0.3%	76	0.2%
Regulated Rivers Total	**19,165**	**41.0%**	**18,184**	**43.8%**
Unregulated Rivers				
01.Border	341	0.7%	294	0.7%
02.Gwydir	400	0.9%	256	0.6%
03.Namoi	672	1.4%	505	1.2%
04.Peel	139	0.3%	193	0.5%
05.Lachlan	348	0.7%	428	1.0%
06.Macquarie	876	1.9%	865	2.1%
07.Far West	1,370	2.9%	1,288	3.1%
08.Murray	537	1.1%	305	0.7%
09.Murrumbidgee	1,196	2.6%	811	2.0%
10.North Coast	2,719	5.8%	2,328	5.6%
11.Hunter	2,030	4.3%	1,649	4.0%
12.South Coast	4,226	9.0%	4,178	10.1%
Unregulated Rivers Total	**14,855**	**31.8%**	**13,100**	**31.6%**
Groundwater				
GW1 Inland	10,286	22.0%	8,241	19.8%
GW2 Coastal	2,458	5.3%	1,991	4.8%
Groundwater Total	**12,744**	**27.3%**	**10,232**	**24.6%**
Total	**46,764**	**100.0%**	**41,517**	**100.0%**

Note: Reported averages for the 2011 Determination are over three years, for the Draft 2016 Determination over four years. Percent allocation to water source is directly comparable between the 2011 Determination and 2016 Determination. Reported amounts represent user share of notional revenue requirement, which is higher than the allowed or target revenue recovered from users through tariffs and minimum annual charge.
Source: IPART, *Review of Prices for the Water Administration Ministerial Corporation - Final Report*, February 2011, p 111, IPART Calculations.

Table 7.6 shows that the use of water take as a cost driver has resulted in a shift of costs:

- across water sources:
  - from unregulated rivers and groundwater to regulated rivers (eg, 43.8% of user share of the NRR allocated to regulated rivers under our Draft 2016 Determination compared to 41.0% allocated under the 2011 Determination)
- within water sources:
  - from valleys with low estimated water take (eg, Lachlan, Macquarie, North Coast, Hunter and South Coast in regulated rivers) to valleys with high water take (eg, Murrumbidgee regulated is allocated 12.9% of user share of the NRR under our Draft 2016 Determination compared to 10.3% allocated under the 2011 Determination, see Table 7.6).

The amount of user share of the NRR allocated to groundwater sources has decreased from 27.3% under the 2011 Determination to 24.6% under our Draft 2016 Determination (see Table 7.6).

8 Price structures: water management charges

After determining the share of efficient costs payable by users and having allocated the user share of costs to water sources, the next step is to decide on the structure of water management charges. We have considered:

- The geographic split of prices, including whether to continue to set prices on a valley basis for regulated rivers and unregulated rivers, and on a regional basis (coastal and inland) for groundwater, while maintaining a separate price for Murrumbidgee groundwater users.
- The tariff structure in terms of the fixed (charge per ML of entitlement) to variable (charge per ML of water take) split of charges – ie, the proportion of revenue to be raised via the fixed and variable components of a 2-part tariff.
- The appropriate price path for valleys/water sources below full cost recovery.
- The level of the minimum annual charge (MAC).
- An alternative price schedule to apply if Floodplain Harvesting licences are introduced.
- Other special category licences.
- A separate price applicable to WaterNSW (Greater Sydney area), to fund the Metropolitan Water Directorate's (MWD's) Metropolitan Water Plan costs.

Each of these issues is discussed in turn in the sections below. We provide our draft decision, and an overview of each issue, including the reasons for our draft decision.

8.1 Geographic split of prices

Draft decision

18 IPART's draft decision is to maintain the geographic split of prices for regulated and unregulated sources, and an inland/coastal division for groundwater sources.

Reasons for our decision

DPI Water proposed to maintain the existing geographic split of prices from the 2011 Determination, except for some consolidation of unregulated rivers.[116] DPI Water's proposed geographic structure for pricing includes 21 water sources, comprised of:

- 11 valleys in regulated rivers.
- 8 regions for unregulated rivers, with the proposed consolidation for pricing of:
  - Border, Gwydir, Namoi and Peel valleys into **North West**, and
  - Lachlan and Macquarie valleys into **Central West**.
- 2 regions for groundwater – inland and coastal.
  - DPI Water proposes to maintain a separate price for Murrumbidgee groundwater users within the inland groundwater source. Under DPI Water's proposal, and consistent with previous determinations, these users are subject to a separate price, which is significantly below full cost recovery, and on a glide path to the inland price. DPI Water does not allocate costs directly to Murrumbidgee groundwater as a separate water source.

Other stakeholders, including water users, had mixed views on the issue of the geographic split of water management prices. Irrigation organisations were generally satisfied with the existing geographic pricing split, with some contending that groundwater pricing should revert to being disaggregated.[117] The Peel Valley Water Users Association had an alternative view and stated that prices for each water source – regulated, unregulated and groundwater – should be the same across the state.[118]

Our draft decision is to maintain valley-based prices for regulated and unregulated rivers, and an inland/coastal division for groundwater sources. This ensures prices are reasonably cost-reflective and there is transparency, and hence accountability, around DPI Water's costs and activities, particularly compared to a scenario of further geographic aggregation of prices.

We also note that, given the current structure of cost information collected and provided by DPI Water, it would not be possible to further geographically disaggregate prices. Further disaggregation may also increase price volatility.

116 DPI Water submission to IPART, September 2015, p 27.
117 See, for example, NSW Irrigators' Council submission to IPART, 16 October 2015, p 15 and Lachlan Valley Water submission to IPART, October 2015, p 2.
118 Peel Valley Water Users submission to IPART, 8 October 2015, pp 1-5.

We have set prices at common levels for unregulated river valleys within the **North West** (ie, Border, Gwydir, Namoi and Peel) and the **Central West** (ie, Lachlan and Macquarie) regions. However, our draft decision is to maintain separate reporting of prices for valleys within these regions. We will therefore ask DPI Water to continue to collect and report (in its Annual Information Returns to IPART and future pricing submissions) cost data on a valley basis. This will aid transparency and our ability to set cost-reflective prices over time.

In the 2011 Determination, we set prices on a valley basis for regulated and unregulated rivers, and decided to transition to inland/coastal prices for groundwater. Following our 2011 Determination, DPI Water stopped reporting costs for groundwater on a valley basis, raising stakeholders' concerns about transparency of costs in this water source.[119]

8.2 Structure of charges

Draft decisions

19 IPART's draft decision is to accept DPI Water's proposed tariff categories for licences, namely:

- entitlement charge licences (subject to an annual entitlement price through 1- or 2-part tariffs)
- water take charge only licences (subject only to the water take price), and
- minimum charge only licences (subject only to the minimum annual charge).

20 IPART's draft decisions for entitlement charge licences are to set:

- 2-part tariffs, comprised of a fixed charge ($ per ML of entitlement or unit share) and a water take charge ($ per ML of water extracted), for regulated rivers, unregulated rivers and groundwater, where water take is measured, and
- 1-part tariffs, comprised of a fixed charge (per ML of entitlement or unit share), for unregulated rivers and groundwater, where water take is not measured.

21 IPART's draft decisions for entitlement charge licences are to 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% 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.

[119] Transcript of Griffith public hearing, Murrumbidgee groundwater users, 20 November 2015, p 47.

Reasons for our decision

Tariff structure

In the 2011 Determination, we recognised that some licences (eg, Supplementary water (regulated rivers) water access licences) were water take only and set prices for them accordingly.[120]

For water access licences with entitlement (or a share component), we set a fixed charge ($ per ML of entitlement or unit share); **or** a fixed ($ per ML of entitlement or unit share) **and** usage charge ($ per ML of water extracted) by water source and valley, depending on whether extraction is metered or not:

- **Where water take is metered** – 2-part tariffs apply, comprised of a fixed charge ($ per ML of water entitlement or unit share) and a usage charge ($ per ML of water extracted), for regulated rivers, unregulated rivers and groundwater. We note that all users on regulated rivers are metered and are therefore subject to a 2-part tariff.
- **Where water extraction is unmetered** – 1-part tariffs apply, comprised of a fixed charge ($ per ML of entitlement or unit share), for unregulated rivers and groundwater.

Our draft decision for the 2016 Determination is to maintain the current tariff structure. The 2-part tariffs will be made available to customers with measured water take, where metering as well as methods other than metering can be used to assess and quantify water take. A new Water Take Measurement Strategy is being developed by DPI Water, in consultation with stakeholders and water users, for measuring take of water under water access licences, and is due to be finalised before July 2016.[121]

Fixed-to-variable split for 2-part tariffs

In setting prices, the ratio of fixed to variable prices is usually set to approximate the underlying cost structure of the agency or utility in question.

DPI Water proposed, and we accepted, to maintain the current 70:30 fixed-to-variable charge ratio for 2-part tariffs by water source. Under this split, tariffs are structured so that 70% of the forecast revenue under the 2-part tariff is recovered from the fixed charge and 30% from the water take charge.

The exception to the 70:30 split is North Coast regulated rivers, where the current 92:08 fixed-to-variable ratio will continue under our draft decision.

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120 IPART, *Review of Prices for the Water Administration Ministerial Corporation - Final Report*, February 2011, p 104.

121 DPI Water submission to IPART, September 2015, p 27.

This ratio for North Coast regulated rivers is set at a different level to reflect a low water activation rate in this water source,[122] and to mitigate bill and revenue variability that would result from the application of a 70:30 split. There are around 70 licences in the North Coast regulated rivers, with about a third of the customers forecast to become subject to the minimum annual charge by 2019-20.[123] The variable charge (per ML of measured water take) would be very high under a 70:30 split, given the current 6% water activation rate.

We note that DPI Water's cost structure is largely fixed and does not reflect the proposed structure of charges. However, we have decided to maintain the 70:30 fixed to variable split as it has widespread stakeholder support, and mitigates some of the impact on users in times of low water availability. Also, as a means of allocating risk between DPI Water and users, the current 70:30 fixed to variable ratio is reasonable.

If the 70:30 fixed-to-variable split is maintained for 2-part tariffs, the overall share of revenue from fixed charges, including minimum annual charges and revenue from 1-part tariffs, will exceed 70%, reflecting DPI Water's cost structure more closely.

Per ML, the 1-part tariff is the sum of both parts of the 2-part tariff – ie, the fixed (entitlement) price and the variable (water take) price of the 2-part tariff. This means that the total bill on a 1-part tariff equals the total bill on a 2-part tariff with water take at 100% of entitlement.

8.3 Starting prices and appropriate price path

Draft decisions

22 IPART's draft decision is to establish 2016-17 prices (starting prices) using DPI Water's proposed basis so that the 'typical bill' for a 2-part tariff licence (not subject to the minimum annual charge) in each water source does not increase when compared to 2015-16 prices.

23 IPART's draft decision is to establish a price glide path from 2017-18 onwards whereby the annual real increase in prices is equal to 2.5% of the full cost recovery price, until full cost recovery is achieved.

[122] Average water activation rate in North Coast regulated rivers is 6%, see Appendix D, Table D.1
[123] IPART analysis based on Water Licensing System data.

Reasons for our decisions

DPI Water's proposed prices were set taking into account the resulting customer impacts. This would result in an expected under-recovery of revenue for a number of water sources at the commencement of the price determination. DPI Water proposed a price glide path for these water sources, which would reduce the under-recovery over the proposed price path.[124]

As per section 15 of the IPART Act, we are required to consider impacts of our pricing decisions on customers and on DPI Water.

Starting prices in 2016-17

We adopted DPI Water's method for calculating starting prices. This was done to minimise the magnitude of increases in customers' bills by limiting price increases in water sources below full cost recovery.[125]

Current (2015-16) prices are no longer reflective of the revised costs allocated to each water source in DPI Water's proposal (see Chapter 7 for discussion).

DPI Water proposed to set the base 2016-17 prices so that the 'typical bill' for a typical licence in each water source does not increase in 2016-17, compared to 2015-16. DPI Water defined a typical licence as a licence on a 2-part tariff, with a median entitlement (excluding licences on the minimum annual charge) and with an average water take activation rate.[126] Activation rate is defined as metered water take as a percentage of entitlement. The median entitlement and water activation rates for a typical licence for each water source are presented in Appendix D.

Under DPI Water's proposal, if the new full cost recovery prices result in a reduction of the 'typical bill' in the water source, prices are set at the full cost recovery level from the first year, 2016-17.

Our draft decision is to accept DPI Water's proposed approach to set the starting 2016-17 price.

Price glide path

For each water source, DPI Water proposed a glide path for the 2016 determination period of a 2.5% real annual increase in prices from 2017-18 onwards, until full cost recovery is reached. This was done to mitigate price impacts on customers.

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124 DPI Water submission to IPART, September 2015, p 190.
125 DPI Water submission to IPART, September 2015, p 217.
126 DPI Water submission to IPART, September 2015, pp 9, 356-59.

We have decided to apply an annual real increase equal to 2.5% of the **full cost recovery price** from 2017-18 onwards, until full cost recovery is achieved. This approach means those water sources further away from full cost recovery will face higher price increases than those closer to cost recovery.

We consider our decision achieves an appropriate balance between transitioning to full cost recovery (over several determination periods) while mitigating customer impacts.

8.4 Level of minimum annual charge

Draft decision

24 IPART's draft decision is to set a minimum annual charge (MAC) to transition from $150 to $200 per licence, per year over the proposed 4-year determination period. Our draft MAC is presented in Table 8.1.

Table 8.1 IPART's draft minimum annual charge ($2015-16)

Pricing water source – All	2016-17	2017-18	2018-19	2019-20
Minimum annual charge	150	167	184	200

Reasons for our decision

A minimum annual charge (MAC) applies to billed licences where the sum of the entitlement charge and water take charge is less than the minimum annual charge. The current MAC is $105.34 per licence per year. In 2013-14, a total of 15,392 licences (42% of licences) were on the minimum annual charge.[127]

DPI Water estimates that its minimum costs per licence are, on average, $235 per licence per year.[128] The costs relate to water management activities such as, compliance management, customer management and billing management.

DPI Water proposed a MAC of $150 per year for the new determination period, choosing not to seek the cost-reflective MAC of $235 due to the impact on minimum charge customers.[129]

Stakeholders generally supported a higher, more cost-reflective MAC in their submissions to the Issues Paper and in feedback at the public hearings. The NSW Irrigators Council stated it would support a move to a $200 MAC if preceded by a 12-month lead in period.[130] Gwydir Valley Irrigators Association and Lachlan

127 This consists of 7,197 in regulated rivers; 4,284 in unregulated rivers; and 3,911 in groundwater licences.
128 DPI Water submission to IPART, September 2015, p 216.
129 DPI Water submission to IPART, September 2015, p 216.
130 NSW Irrigators Council, Sydney public hearing, 23 November 2015, Transcript p 17.

Valley Water supported DPI Water's proposed increase to the MAC.[131] Richmond Wilson Combined Water User Association supported a MAC of $200 per year and, potentially, $235 over the longer term.[132]

There are five activities that contribute to the costs of minimum annual charge estimates. The two activities that make up around 60% of costs are 'compliance management' and 'customer management'. We consider that the approach taken by DPI Water to assess costs of $235 per licence, per year is reasonable.

We decided to transition the MAC towards the estimated cost-reflective level over several determination periods, from $150 in 2016-17 to $200 in 2019-20. Our decision will have an impact on the level of full cost recovery prices by water source, with a larger share of the revenue recovered through the MAC. The number of customers subject to the MAC will also increase compared to DPI Water's proposal. This is further discussed in Chapter 13.

8.5 Floodplain harvesting licences

Draft decision

25 IPART's draft decision is to accept DPI Water's proposal to set separate water management prices to apply from 1 July following Ministerial approval to issue all floodplain harvesting licences (as water take charge only licences) for that water source.

Reasons for our decision

DPI Water proposed two tariff levels for water sources where floodplain harvesting (FPH) licences will be introduced (ie, a tariff schedule 'with' and a tariff schedule 'without' floodplain harvesting licences).[133]

Floodplain harvesting is the capture and use of water flowing across a floodplain that is not covered by another extraction category such as an access licence.[134] Currently, DPI Water does not monitor or charge for the water take involved with floodplain harvesting.

DPI Water stated that harvesting of floodplain water needs to be regulated due to impacts it has on downstream water supply, and potential environmental impacts.[135]

131 Gwydir Valley Irrigators Association submission to IPART, 16 October 2015, p 16; and Lachlan Valley Water Inc submission to IPART, October 2015, p 2.
132 Transcript of Sydney public hearing, 23 November 2015, p 28.
133 DPI Water submission to IPART, September 2015, pp 10-11.
134 DPI Water NSW Floodplain Harvesting Policy, May 2013, p 3.
135 DPI Water submission to IPART, September 2015, p 122.

Legislative background

Floodplain harvesting licences are covered under *Water Management Act 2000* which was amended to include relevant new sections.

These changes facilitate the issuing of floodplain harvesting access licences (for regulated and unregulated rivers), consistent with the Floodplain Harvesting Policy 2013. Key measures of the Floodplain Harvesting Policy include:

- Floodplain harvesting licences will be determined according to the capability of the works that are to be used to extract water.
- Floodplain harvesting licences will be issued in perpetuity, like most other categories of water licence under the *Water Management Act 2000*.
- Floodplain harvesting licences will have compensation rights under the *Water Management Act 2000.*
- Trading of annual water allocations for floodplain harvesting licences will be permitted as soon as methods for monitoring and accounting for floodplain harvesting extractions are in place.[136]

These legislative changes enable regulations to be made to prescribe when existing floodplain harvesting activities will give rise to a licence and the terms and conditions of such licences, including their water share component. These regulations are yet to be published.

DPI Water proposed:

- Two tariff levels for water sources where floodplain harvesting licences will be introduced: one that excludes and one that includes floodplain harvesting licences and associated estimates of water take.
- That the change from the exclusive tariff to the inclusive tariff apply from the 1 July following Ministerial approval to issue all floodplain harvesting licences for that water source.[137]

The implementation of floodplain harvesting access licences is still being negotiated with stakeholders, and will only proceed when all licences in a water source can be issued concurrently.[138] Implementation is subject to Ministerial approval to issue all floodplain harvesting licences for the water source.

DPI Water estimates 450 new floodplain harvesting licenses will be issued during the 2016 determination period.[139]

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136 DPI Water website accessed 6 October 2015. http://www.water.nsw.gov.au/__data/assets/pdf_file/0012/548499/floodplain_harvesting_policy.pdf

137 DPI Water submission to IPART, September 2015, p 9.

138 DPI Water submission to IPART, September 2015, p 122.

139 DPI Water submission to IPART, September 2015, p 157.

The development and implementation of the floodplain harvesting water take framework by DPI Water has been funded by the Commonwealth Government.[140] There has been no cost to existing water access licence holders. However, under the impactor pays principle, we consider it appropriate that new floodplain harvesting licence holders contribute to ongoing management, monitoring and enforcement costs when the licences are created.

The marginal level of associated activities will add no additional operating costs to revenue needs. Therefore, the implementation of floodplain harvesting will spread the revenue requirement over a greater volume of water take in the water sources where it is implemented.

8.6 Other special categories of licences

Draft decision

26 IPART's draft decision is to accept DPI Water's proposed special categories of licences as per Table 8.2.

Table 8.2 IPART's draft decision on special licence categories for the 2016 Determination

Licence category	Tariff category
Floodplain harvesting (regulated river)	Water take charge only
Major utility (Barnard) (regulated river)	Minimum charge only
Supplementary water (regulated river)	Water take charge only
Supplementary water environmental access (regulated river)	Water take charge only
Supplementary water (Lowbidgee) (regulated river)	Water take charge only
Floodplain harvesting (unregulated river)	Water take charge only
Major utility (Grahamstown) (unregulated river)	Minimum charge only
Supplementary Aboriginal environmental water access (unregulated river)	Water take charge only
Unregulated river (regulated supply)	Minimum charge only
Unregulated river (regulated supply – local water utility)	Minimum charge only
Unregulated river (special additional high flow)	Water take charge only
Salinity and water table management (groundwater)	Minimum charge only

[140] DPI Water submission to IPART, September 2015, p 149.

Reasons for our decision

DPI Water provided additional information to support proposed licences and their tariff categories.[141] Floodplain harvesting licences (in regulated and unregulated river water sources) are discussed above. These are water take charge only licences. The supplementary water (regulated river) licence type continues from the 2011 Determination as a water take only licence. The rationale for other proposed licence types is outlined below.

Major utility (Barnard) (regulated river)

DPI Water proposed to create this licence type for use in accounting for the extraction of transferred water, to ensure that licence holders do not pay twice for one extraction of water. The licence would apply to the Barnard scheme in the Hunter regulated river, for water that is taken from the Barnard River under an access licence held by AGL Macquarie, physically transferred from the Barnard River to Glenbawn Dam, and stored there for use by AGL Macquarie at a later date.[142] DPI Water proposed this licence category as a minimum charge only licence.

Supplementary water environmental access (regulated river)

This is a new licence introduced in the amended Schedule 3 of the *Water Management (General) Regulation 2011* as a subcategory of supplementary water access licence, to fill an administrative gap within the regulation (as every other category of access licence already had an environmental subcategory). If granted in the future, it is likely they will be granted to water environmental assets in regulated river water sources.[143] DPI Water proposed this licence category as a water take charge only licence.

Supplementary water (Lowbidgee) (regulated river)

A new licence introduced in the amended Schedule 3 of the *Water Management (General) Regulation 2011,* as a result of commencing the Water Sharing Plan for the Murrumbidgee regulated river water source. Water from regulated river water sources that was previously diverted for flood irrigation during periods of supplementary access in this WSP has been converted to supplementary water (Lowbidgee) access licences. [144] DPI Water proposed this licence category as a water take charge only licence.

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141 DPI Water submission to IPART, September 2015, pp 195-198.
142 DPI Water submission to IPART, September 2015, pp 122-123.
143 DPI Water submission to IPART, September 2015, p 123.
144 DPI Water submission to IPART, September 2015, p 124.

Major utility (Grahamstown) (unregulated river)

A new licence proposed to address potential double counting of water taken from the Williams River and transferred to the Grahamstown Dam, under licences held by the Hunter Water Corporation.[145] DPI Water proposed this licence category as a minimum charge only licence.

Supplementary Aboriginal environmental water access (unregulated river)

Schedule 3 of the *Water Management (General) Regulation 2011* was amended to include supplementary Aboriginal environmental water access licences. These licences were created specifically for inclusion in the WSP for the Barwon-Darling unregulated and alluvial water sources to support the Brewarrina Aboriginal fish traps (Baiame's Ngunnhu).[146] DPI Water proposed this licence category as a water take charge only licence.

Unregulated river (regulated supply – local water utility) and unregulated river (regulated supply)

New licence categories introduced in the amended Clause 4 of the *Water Management (General) Regulation 2011.* These licences are used to take water that has been diverted from a regulated water source under a regulated river access licence into an unregulated river water source. The licences are defined as specific-purpose access licences, which means the licence must be cancelled when the purpose for which the licence was issued finishes.[147] DPI Water proposed these licence categories as minimum charge only licences.

Unregulated river (high flow)

This licence category was a minimum charge only licence under our 2011 Determination. Clause 4 of the *Water Management (General) Regulation 2011* was amended to include unregulated river (high flow) access licences. Unregulated river (high flow) access licences result from the conversion of an existing unregulated river access licence according to rules in the relevant Water Sharing Plan.[148] DPI Water proposed this licence category as an entitlement charge licence.[149]

145 DPI Water submission to IPART, September 2015, p 123.
146 DPI Water submission to IPART, September 2015, p 123.
147 DPI Water submission to IPART, September 2015, p 124.
148 DPI Water submission to IPART, September 2015, p 124.
149 DPI Water submission to IPART, September 2015, p 198.

Unregulated river (special additional high flow)

This licence category is introduced in the amended Clause 4 of the *Water Management (General) Regulation 2011* arising from the conversion of a *Water Act 1912* entitlement. This entitlement allowed water users to irrigate a larger parcel of land and was usually linked to an existing entitlement for a smaller parcel of land.

DPI Water states that access to water under these access licences can only occur during extremely high flow events, finding it unlikely they will be used every year.[150] DPI Water proposed this licence category as a water take charge only licence.[151]

Salinity and water table management (groundwater)

Clause 4 of the *Water Management (General) Regulation 2011* was amended to include salinity and water table management access licences. These licences are defined as specific purpose access licences, the licence must be cancelled when the purpose for which the licence was issued ceases.

The licences have been created in a number of groundwater WSPs to combat the rising volume and effects of salinity in the Murray Darling Basin and are part of a salt interception scheme. Salt interception schemes are large-scale groundwater pumping and drainage projects that intercept saline water flows and dispose of them, generally by evaporation.[152] DPI Water proposed this licence category as a minimum charge only licence.[153]

8.7 Separate price for WaterNSW (for the Greater Sydney area)

Draft decision

27 IPART's draft decision is to apply a separate price to WaterNSW, which will recover the user share of Metropolitan Water Directorate's costs to review the Sydney Metropolitan Water Plan (MWP). The price will be an additional fixed charge ($ per ML of entitlement or unit share) applied to the water access licences held by WaterNSW in South Coast (unregulated rivers) water source.

Reasons for our decision

Based on the 'impactor pays' principle, the costs specific to the development of the Metropolitan Water Plan (MWP) for the Sydney metropolitan region should be recovered from this region.

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150 DPI Water submission to IPART, September 2015, p 125.
151 DPI Water submission to IPART, September 2015, p 198.
152 DPI Water submission to IPART, September 2015, p 123.
153 DPI Water submission to IPART, September 2015, p 198.

We have deducted 25% of DPI Water's forecast (MWD) operating costs to review the MWP, as we consider these costs to be 'out-of-scope'. We have also applied a 5% efficiency adjustment to the residual costs to establish the total efficient MWP costs (as recommended by our expenditure review consultant, Synergies[154] and outlined in Chapter 4 on operating expenditure). We accepted DPI Water's proposed 70% user share for this activity.

We considered the allocation of the user share of MWP costs to users in the South Coast unregulated water source. We found that in the Sydney metropolitan area, the impactor is the major water utility which, on behalf of its customers, creates the need for metropolitan water planning to ensure a suitable balance between water supply and demand over time. Water access licences held by major water utilities provide for this demand.

The former Sydney Catchment Authority, now WaterNSW, holds 987,000 ML (or 78%) of entitlement in the South Coast unregulated rivers water source.[155] Sydney Water Corporation (SWC) holds 20,075 ML, or 2%, of entitlement in the same water source.[156]

Of the remaining 20% of entitlements in South Coast unregulated rivers water source, the majority fall outside the Sydney MWP area. Based on the impactor pays principle, these irrigators should not be bearing the costs of the metropolitan water planning activities.

Our draft decision is to allocate the user share of in-scope and efficient costs of MWP directly to WaterNSW. This is further discussed in Chapter 10.

154 Synergies Final Report, January 2016, p 9.

155 The *Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources* is one of the water sources which together form the South Coast unregulated rivers pricing water source.

156 *Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources 2011,* s26(d).

9 Forecast water entitlements and water take

Under our draft decision on price structures, we have set:

- a 2-part tariff – comprising a fixed entitlement charge (per ML of entitlement or a unit share, per year) and a variable water take charge (per ML of water extracted), and
- a 1-part tariff – comprising a fixed entitlement charge only, where a licence holder does not have a meter in place.

To set these entitlement and water take charges for each water source at the levels required to recover the efficient user share of costs for each water source over the determination period, we need to forecast:

- entitlement volumes that are subject to an annual entitlement charge,[157] and
- water take volumes subject to a water take charge.

For a given level of costs allocated to a water source, the higher the volumes of entitlement/water take for that water source, the lower the corresponding entitlement/water take price in this water source.

Entitlement volumes are generally stable over time, with some minor changes as new entitlements are added through Ministerial decisions. In contrast, water take can be volatile and more uncertain. If the forecast water take is not reflective of the actual water take over the 2016 determination period, DPI Water may either over recover or under recover its target revenue (costs).

The sections below explain our draft decisions on forecast entitlement and water take volumes for the purpose of setting entitlement and water take charges.

We also discuss our draft decision on a demand volatility adjustment mechanism, to manage the potential for DPI Water to materially over or under recover its costs as a result of variations between actual and forecast water take volumes over the 2016 determination period. This recognises that there is level of uncertainty with water take forecasts.

[157] This is also known as the share component of a licence, which entitles the licence holder to a "share", as measured in megalitres, of water available in a water source. Source: http://www.water.nsw.gov.au/water-licensing/about-licences/new-access-licences

9.1 Entitlement volume forecasts

Draft decisions

28 IPART's draft decision is to apply the entitlement volumes proposed by DPI Water for the purpose of setting fixed charges, which are listed in Table 9.1, Table 9.2 and Table 9.4.

29 IPART's draft decision is to apply DPI Water's proposed entitlement volumes for WaterNSW, for the purpose of setting a separate price for WaterNSW (South Coast unregulated rivers) (Table 9.3).

DPI Water's proposed entitlement volumes were extracted from its Water Licensing System, as at 1 July 2015:

- For regulated rivers, the total entitlement is forecast to be 7.8 million ML per year over the 2016 determination period (Table 9.1).
- For unregulated rivers, the total entitlement is forecast to be 3.07 million ML per year over the 2016 determination period (Table 9.2)
- For groundwater, the total entitlement is forecast to be 1.90 million ML per year over the 2016 determination period (Table 9.4).

9.1.1 Entitlement volumes for regulated rivers

Table 9.1 below lists DPI Water's forecast entitlement volumes for regulated rivers over the 2016 determination period, which we have accepted in setting draft prices. This compares with Figure 9.1, which shows IPART's 2011 determined entitlement volumes for regulated rivers, DPI Water's actual entitlement volumes, and forecasts for 2015-16 onwards.

We note that entitlement forecasts for regulated rivers have increased by 0.5% over the 2015-16 figures as a result of the issue of environmental licences. Overall, volumes have remained fairly stable – around 7.7 million to 7.8 million ML per year since 2011-12.[158] We also note that entitlement volumes between 2011-12 and 2013-14 were very close to volumes used in our 2011 Determination (around 0.1% less).

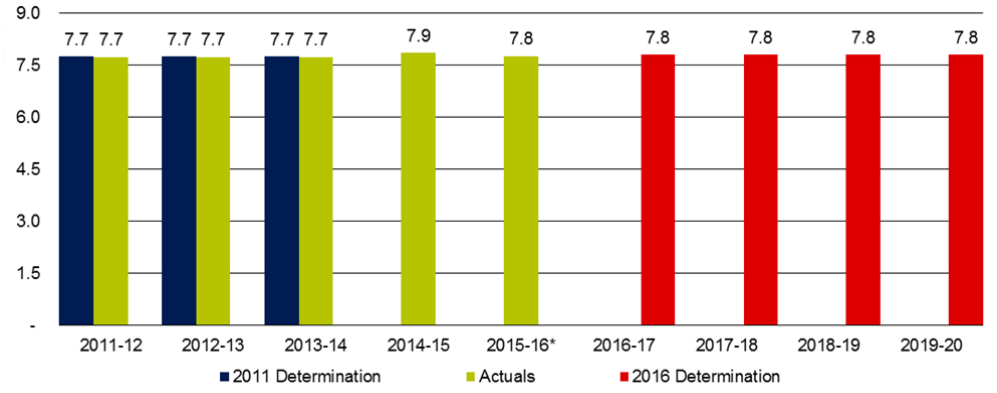
[158] DPI Water submission to IPART, September 2015, p 327.

Table 9.1 Regulated river annual share component for entitlement charge licences (2016-17 to 2019-20) (ML)

Valley	Entitlements
Border	266,360
Gwydir	536,505
Namoi	265,094
Peel	47,795
Lachlan	690,768
Macquarie	675,186
Far West	-
Murray	2,378,256
Murrumbidgee	2,708,451
North Coast	10,070
Hunter	208,831
South Coast	15,121
Total	**7,802,437**

Source: DPI Water – Annual Information Return (16 October 2015).

Figure 9.1 Comparison of entitlement volumes for regulated rivers – IPART's 2011 determination, actuals and IPART's draft decision (millions of ML).



Note: The figure for 2015-16 is a forecast.

Data source: IPART Calculations based on DPI Water – Annual Information Return (16 October 2015).

9.1.2 Entitlement volumes for unregulated rivers

Table 9.2 below lists DPI Water's forecast entitlement volumes for unregulated rivers over the 2016 determination period, which IPART has accepted in setting draft prices. This compares with Figure 9.2, which shows IPART's 2011 determined entitlement volumes for unregulated rivers, DPI Water's actual entitlement volumes, and forecasts for 2015-16 onwards.

DPI Water's forecast entitlement volumes for unregulated rivers includes entitlement volumes issued to existing licences in the Barwon Darling (Far West) and entitlement volumes for domestic and stock licences not subject to water management charges prior to 1 July 2016.

DPI Water estimates that around 66% of unregulated entitlements will be subject to a 2-part tariff and 34% to a 1-part tariff over the 2016 determination period (Table 9.2).

We note that entitlement volumes for unregulated rivers have remained fairly stable since 2011-12 – around 2.9 million to 3.1 million ML per year.[159] We also note that entitlement volumes between 2011-12 and 2013-14 were 6.1% to 6.6% more than the volumes used in our 2011 Determination.

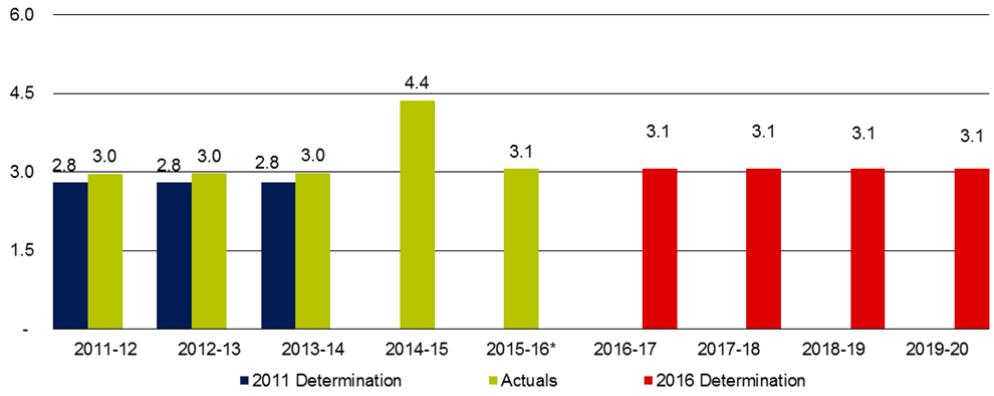
Table 9.2 Unregulated river annual share component for entitlement charge licences (2016-17 to 2019-20)

	2-part tariff entitlements (ML)	1-part tariff entitlements (ML)	Total (ML)
Border	1,824	42,207	44,031
Gwydir	757	47,091	47,848
Namoi	1,089	151,635	152,724
Peel	5,600	12,353	17,953
Lachlan	5,183	49,737	54,920
Macquarie	48,428	133,161	181,589
Far West	145,582	75,620	221,202
Murray	17,142	34,480	51,622
Murrumbidgee	16,687	80,130	96,817
North Coast	122,523	152,081	274,604
Hunter	490,781	180,855	671,636
South Coast	1,161,278	96,348	1,257,625
Total	**2,016,874**	**1,055,698**	**3,072,572**

Source: DPI Water – Annual Information Return (16 October 2015).

[159] We note that the total entitlement for 2014-15 is likely to be an error arising from the mis-counting of entitlement volumes for Hunter and South Coast water sources.

Figure 9.2 Comparison of entitlement volumes for unregulated rivers – IPART's 2011 determination, actuals and IPART's draft decision (millions of ML).



Note: For comparative purposes, we have aggregated 2-part and 1-part entitlements for unregulated rivers. We note that there is likely to be an error in DPI Water's data for 2014-15. The figure for 2015-16 is a forecast only.
Data source: IPART Calculations based on DPI Water – Annual Information Return (16 October 2015).

Unregulated river entitlement volumes for WaterNSW

The forecast entitlement volume held by WaterNSW for servicing its Greater Sydney customers is shown in Table 9.3. This is a subset of the share component for the South Coast water source (Table 9.2). The entitlement volume held by WaterNSW has remained unchanged since 2011-12.

Table 9.3 WaterNSW' annual share component for entitlement charge licences (2016-17 to 2019-20)

Pricing water source	Unregulated river entitlement (ML)
South Coast (WaterNSW)	987,000

Note: WaterNSW (Metropolitan) as described by DPI Water is termed WaterNSW to reflect the merged entity.
Source: DPI Water submission to IPART, September 2015, p 202.

9.1.3 Entitlement volumes for groundwater

The forecast of entitlement volumes for groundwater water sources includes estimates of increases in entitlements expected to be issued under controlled allocation orders. The total entitlement volume is forecast to increase by 2,463 ML (or 0.1%), from 1,896,108 ML to 1,898,571 ML per year, over the 2016 determination period (Table 9.4).

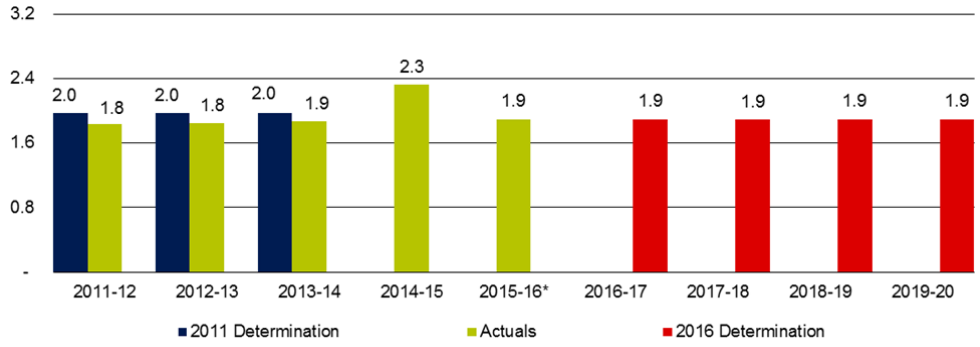
We note that entitlement volumes for groundwater sources have remained fairly stable since 2011-12 – around 1.8 million to 1.9 million ML per year since 2011-12.[160] We also note that entitlement volumes between 2011-12 and 2013-14 were 5.2 to 6.6% less than the volumes used in our 2011 Determination.

Table 9.4 Groundwater annual share component for entitlement charge licences (2016-17 to 2019-20) (ML)

	2016-17	2017-18	2018-19	2019-20
1-Part entitlements				
Inland	76,563	77,687	78,811	79,935
Coastal	341,770	342,175	342,580	342,985
Total 1-Part entitlements	**418,333**	**419,862**	**421,391**	**422,920**
2-Part entitlements				
Inland	1,448,775	1,446,652	1,446,652	1,446,651
Coastal	29,000	29,000	29,000	29,000
Total 2-Part entitlements	**1,477,775**	**1,475,652**	**1,475,652**	**1,475,651**
Total Entitlements	**1,896,108**	**1,895,514**	**1,897,043**	**1,898,571**

Source: DPI Water – Annual Information Return (16 October 2015).

Figure 9.3 Comparison of entitlement volumes for groundwater sources – IPART's 2011 Determination, actuals and IPART's draft decision (millions of ML)



Note: For comparative purposes, we have aggregated 2-part and 1-part entitlements for groundwater sources. We note that there is likely to be an error in DPI Water's data for 2014-15. The figure for 2015-16 is a forecast only.

Data source: IPART Calculations based on DPI Water – Annual Information Return (16 October 2015).

[160] We note that the total entitlement for 2014-15 is likely to be an error arising from the mis-counting of entitlement volumes for Hunter and South Coast water sources.

9.1.4 Reason for our decisions on entitlement volumes

We are satisfied that DPI Water's forecast entitlement data for the 2016 determination period are the best available and are reasonable to use for the determination of prices. Lachlan Valley Water submitted that the entitlement volumes are reasonable.[161] Our consultants, Synergies, did not identify any issues with these estimates.

9.2 Water take volume forecasts

Draft decision

30 IPART's draft decision is to apply the forecast water take volumes (including floodplain harvesting) submitted in DPI Water's pricing proposal, for the purpose of setting water take charges (as outlined in Table 9.5, Table 9.6, and Table 9.7).

9.2.1 Water take forecasts for regulated rivers

For regulated rivers, DPI Water forecasts water take to be around 4.36 million ML per year over the 2016 determination period (Table 9.5). DPI Water used historical data to forecast water take. Forecasts are mostly based on the historical 20-year average for each water source, except for:

- The North Coast and South Coast regulated water sources, where only 11 years of water take data are available.
- Lowbidgee supplementary water take (part of the Murrumbidgee regulated water source), which has been calculated separately using a 3-year average.

We note that the forecast annual water take is around 11.5% less than the average water take of 4.9 million ML per year between 2011-12 and 2014-15, as shown in Figure 9.5.

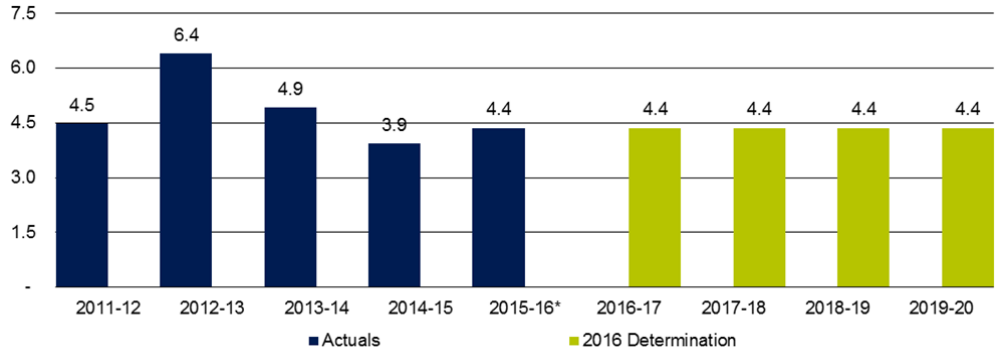
[161] Lachlan Valley Water submission to IPART Issues Paper on Review of prices for the Water Administration Ministerial Corporation for the NSW Office of Water – from 1 July 2016, October 2015, p 2.

Table 9.5 Regulated river annual water take forecasts (2016-17 to 2019-20)

Valley	Water take (ML)
Border	144,533
Gwydir	266,784
Namoi	167,761
Peel	11,242
Lachlan	215,287
Macquarie	263,577
Far West	-
Murray	1,414,869
Murrumbidgee	1,751,181
North Coast	584
Hunter	124,601
South Coast	3,943
Total	**4,364,363**

Note: Water take is assumed to be same for each year of the 2016 determination period.
Source: DPI Water – AIR (16 October 2015).

Figure 9.4 Comparison of water take volumes for regulated rivers – actuals and IPART's draft decision (millions of ML)



Note: The figure for 2015-16 is a forecast only.
Data source: IPART Calculations based on DPI Water – Annual Information Return (16 October 2015).

9.2.2 Water take forecasts for unregulated rivers

For unregulated rivers, water take subject to a 2-part tariff is forecast to increase from 0.89 million to 0.91 million ML per year over the 2016 determination period (Table 9.6).

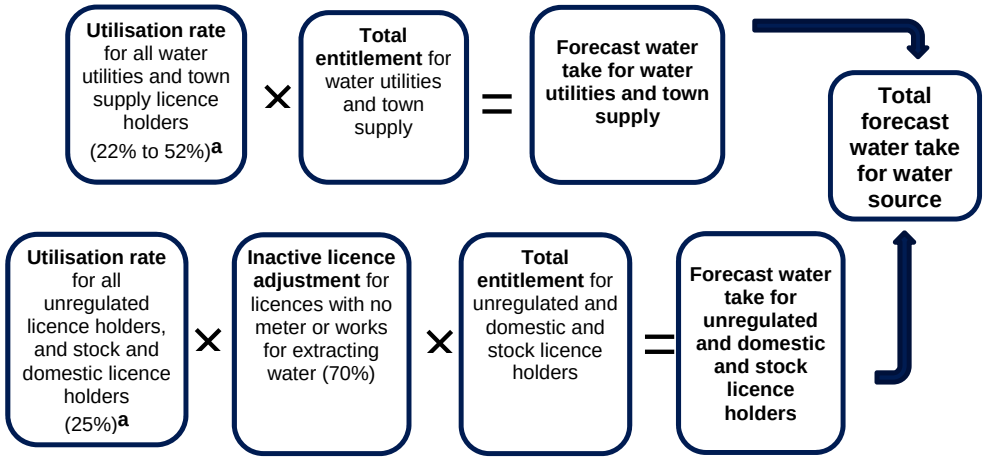
As shown in Figure 9.5, DPI Water estimated water take by:

1. Calculating the utilisation rate (total water take volumes divided by total entitlements volumes) for:
   a) major utilities, local water utilities and town water supply (utilities), and

b) unregulated rivers licence holders and domestic and stock licence holders (unregulated and domestic).

2. Adjusting the utilisation rate for unregulated licence holders and domestic and stock licence holders by 70% to account for inactive licences - ie, licences with no meter or works to allow for water extraction.[162]
3. Applying the utilisation rates to entitlement volumes for utilities, and unregulated and domestic licences, to derive the forecast annual water take for both types of licences.
4. Combining the forecast water take for utilities and unregulated and domestic licences to derive the total forecast water take for the water source/river valley.

Figure 9.5 DPI Water's approach to estimating water take for unregulated rivers



a The utilisation rate for water utilities and town supply is 40%, except for Hunter Water Corporation and WaterNSW (22% and 52%, respectively). The utilisation rate for unregulated licence and stock and domestic licence holders is 25%, except for the Far West which is 101%.

Data source: DPI Water, *Notes on the forecast of annual licensed water take and tariff assignments for the NSW Office of Water 2015/16 IPART submission*, pp 3-4.

[162] DPI Water assumed 30% of entitlement volumes were inactive based, on sampled data from the Upper Murray, Hawkesbury/Nepean, Bega/Bemboka and Barwon Darling water source areas.

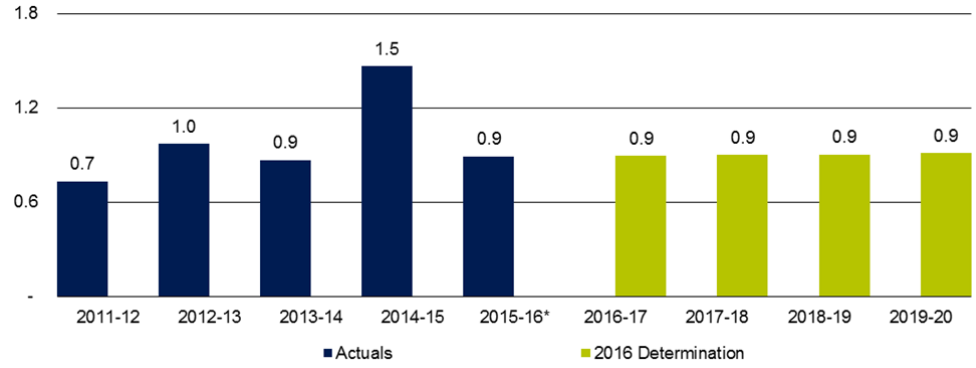
Table 9.6 Unregulated 2-part tariff annual water take forecasts (ML)

Valley	2016-17	2017-18	2018-19	2019-20
Border	730	730	730	730
Gwydir	303	303	303	303
Namoi	434	434	434	434
Peel	2,240	2,240	2,240	2,240
Lachlan	1,978	1,978	1,978	1,978
Macquarie	19,236	19,236	19,236	19,236
Far West	101,687	101,687	101,687	101,687
Murray	4,561	4,561	4,561	4,561
Murrumbidgee	4,013	4,013	4,013	4,013
North Coast	48,885	48,885	48,885	48,885
Hunter	128,579	129,033	129,490	129,950
South Coast	580,768	586,179	590,660	596,803
Total	**893,415**	**899,280**	**904,217**	**910,821**

Note: Water take is assumed to be same for each year of the 2016 determination period.
Source: DPI Water – AIR (16 October 2015).

We note that the forecast annual water take is around 10.5% less than the average water take of 1.0 million ML per year between 2011-12 and 2014-15, as shown in Figure 9.6.

Figure 9.6 Comparison of water take volumes for unregulated rivers – actuals and forecasts (millions of ML)



Note: The figure for 2015-16 is a forecast only.
Data source: IPART Calculations based on DPI Water – Annual Information Return (16 October 2015).

9.2.3 Water take forecasts for groundwater water sources

DPI Water forecasts groundwater water take to remain at around 0.76 million ML per year over the 2016 determination period (Table 9.7).

Similar to unregulated rivers, DPI Water applied utilisation factors to estimate water take for groundwater sources. The utilisation factors were based on metered water data over a four to eight year period.[163] DPI Water then calculated the utilisation rates for four types of groundwater sources before aggregating them as either "inland" or "coastal":

- major aquifers (84%)
- minor aquifers (20%)
- Hunter Water Corporation (23%), and
- WaterNSW (20%).[164]

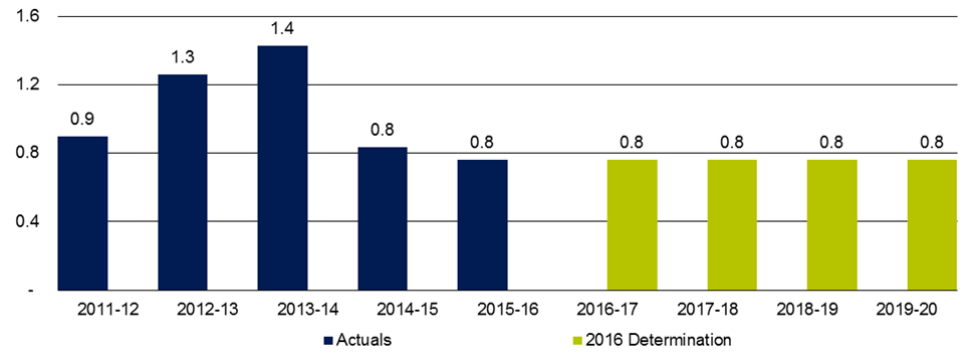
Table 9.7 Groundwater 2-part tariff annual water take forecasts (2016-17 to 2019-20) (ML)

Water source	2016-17	2017-18	2018-19	2019-20
Inland	755,099	755,773	755,773	755,773
Coastal	6,670	6,670	6,670	6,670
Total	**761,769**	**762,443**	**762,443**	**762,443**

Source: DPI Water – AIR (16 October 2015).

We note that the forecast annual water take is around 31% less than the average water take of 1.1 million ML per year between 2011-12 and 2014-15, as shown in Figure 9.7.

Figure 9.7 Comparison of water take volumes for groundwater – actuals and forecasts (millions of ML)



Note: The figure for 2015-16 is a forecast only.

Data source: IPART Calculations based on DPI Water – Annual Information Return (16 October 2015).

163 DPI Water used four years of water take data for minor aquifers and eight years of water take data for major aquifers.

164 DPI Water, *Notes on the forecast of annual licensed water take and tariff assignments for the NSW Office of Water 2015/16 IPART submission*, pp 3-4.

9.2.4 Floodplain harvesting

Draft decision

31 IPART's draft decision is to apply the forecast water take volumes for floodplain harvesting, submitted in DPI Water's pricing proposal, for the purpose of setting water take charges with floodplain harvesting (as outlined in Table 9.8).

We have accepted DPI Water's floodplain harvesting water take forecasts to set charges when floodplain harvesting is introduced. To derive the forecasts in Table 9.8, DPI Water used the detailed Gwydir floodplain harvesting model to interpolate estimates for the Border, Namoi, Macquarie and Far West water sources.[165]

Table 9.8 Floodplain harvesting annual water take (ML)

Valley	Water take
Regulated	
Border	41,000
Gwydir	118,000
Namoi	48,000
Macquarie	29,000
Unregulated	
Far West	30,000
Total	**266,000**

Source: DPI Water – AIR (16 October 2015).

We note that DPI Water expects the implementation of licences and floodplain management plans from 2016-17 onwards.[166] As Ministerial approval has not yet been granted for these charges, we have determined an alternative set of charges to be implemented in Chapter 10, once Ministerial approval is issued for all floodplain harvesting licences in a water source.

9.2.5 Reasons for our decision on water take forecasts

In making our decision, we have taken into consideration issues raised during our public hearings and in submissions, as well as the findings of our consultant, Synergies. In particular, we note that:

- NSW Irrigators Council suggested using IQQM data as an alternative methodology to estimating water take.[167]

[165] DPI Water, *Notes on the forecast of annual licensed water take and tariff assignments for the NSW Office of Water 2015/16 IPART submission*, pp 8-9.

[166] DPI Water – Annual Information Return (16 October 2015).

[167] NSW Irrigators Council submission to IPART Issues Paper on Review of prices for the Water Administration Ministerial Corporation for the NSW Office of Water – from 1 July 2016, October 2015, p 17.

- Coleambally Irrigation raised queries about how water take for the Lowbidgee part of the Murrumbidgee water source was estimated.[168]
- Synergies raised issues about the robustness of water take estimates for unregulated water sources and Lowbidgee, because they were calculated using a shorter sample period of one to four years.[169]
- Gwydir Valley Irrigators Association stated the inclusion of floodplain harvesting water take volumes is premature.[170]

We consider that, for each water source, DPI Water's forecasts are more appropriate than IQQM estimates because they are more reflective of current water take patterns and easily identifiable for each valley. Although DPI Water has used shorter historical timeframes on which to base its water take forecasts for some water sources (eg, Lowbidgee and unregulated water sources), we consider this is acceptable.

For the Lowbidgee part of the regulated Murrumbidgee water source, the use of the 3-year historical average (rather than a 20-year historical average) for water take forecasts is due to recent water sharing plan amendments. While this is not ideal, using a longer series data on diversions would not account for recent structural changes in water take patterns. We note the time-series should be longer at the next price review, as more historical data is available.

For unregulated rivers and groundwater sources, DPI Water has provided an internal paper describing its methodology for estimating water take where there is limited data. Our analysis indicates that DPI Water improved the quality of its estimates by applying utilisation factors to each water source's entitlement volume, to more accurately estimate water take. This represents an improvement compared with our 2011 determination, where no reliable estimates were able to be developed. We also note that the water take estimates for regulated rivers are not too dissimilar to actual water take figures recorded between 2011-12 and 2014-15.

For floodplain harvesting, we consider the water take forecasts to be reasonable and based on the latest modelling available from the Gwydir water source.

Overall, we have accepted DPI Water's forecasts of water take. Nevertheless, we acknowledge the uncertainty (and hence revenue volatility) associated with water take forecasts. Our proposed approach for managing this uncertainty is outlined below.

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168 Ms Jenny McLeod, Coleambally Irrigation, Griffith public hearing 30 November 2015, Transcript p 23, lines 1-4.

169 Synergies Final Report, January 2016, p 71.

170 Gwydir Valley Irrigation Association submission to IPART Issues Paper on Review of prices for the Water Administration Ministerial Corporation for the NSW Office of Water – from 1 July 2016, October 2015, p 10.

9.3 Demand volatility adjustment mechanism

Draft decision

32 We will consider at the next determination of WAMC's prices:

- An adjustment to the revenue requirement and prices to address any over or under-recovery of revenue over the 2016 determination period due to material differences between the level of billable water take over the period and the forecast water take volumes used in making this determination.
- At the next determination, we will consider whether and how best to make a revenue adjustment based on the circumstances at the time.

Reasons for considering a demand volatility adjustment mechanism

We accept stakeholder concerns regarding the uncertainty of DPI Water's water take forecasts. In particular, Lachlan Valley Water raised the desirability of an adjustment mechanism to address the potential over-recovery of revenue by DPI Water,[171] in the event that actual water take over the 2016 Determination may be considerably above the forecasts used to set prices. We also acknowledge that actual water take may be considerably below forecasts because of dry weather and limited water availability, which could lead to an under-recovery of revenue.

Therefore, we see merit in introducing a demand volatility adjustment mechanism for DPI Water. While our decisions in this 2016 Determination cannot bind a future Tribunal, this demand volatility adjustment could be implemented by comparing the forecast and actual water demand over the 2016 determination period and adjusting the revenue requirement over the next determination period, as decided by the Tribunal at that time.

Under this mechanism, IPART may make an adjustment to DPI Water's revenue requirement at the next determination if there is a material variation between actual and forecast water take over the 2016 determination period. Based on the circumstances at the time, IPART would have discretion to decide:

- whether a variation from forecast is material
- whether the cause of the variation warrants adjustment, and
- if an adjustment is warranted, how to make the adjustment to the revenue requirement (and therefore prices) at the next determination.

Where there is an under-recovery of revenue, DPI Water could make a case to IPART to recover any shortfall in revenue it deems significant and is directly related to uncontrollable demand forecast risks - eg, dry weather and limited water availability.

[171] Ms Mary Ewing, Lachlan Valley Water, Sydney public hearing 23 November 2015, Transcript, p 26, lines 78-86.

IPART would also monitor any over-recovery of revenue in the 2016 determination period resulting from higher than forecast water take over the period, and potentially make an adjustment to the revenue requirement at the next determination.

10 Water management charges

This chapter sets out our draft decisions on water management prices. It covers our decision on the annual water management charges for regulated, unregulated and groundwater sources for both 1-part and 2-part tariffs. These draft prices are set to recover the user share of DPI Water's efficient costs of water planning and management and apply to all categories of water access licences.

We present prices for water sources on the basis of **no floodplain harvesting (FPH)** as well as **with FPH** for four regulated river valleys and one unregulated river valley. This reflects our decision to set separate water management prices for a water source if the Minister approves issuing floodplain harvesting licences for that water source.

We also set out our draft increase in the minimum annual charge (MAC). The MAC applies if the combination of entitlement price and water take price for a licence is less than the level of the MAC.

Finally, we detail our decision to apply a levy to WaterNSW to recover the costs specific to the development of the Metropolitan Water Plan (MWP) for the Sydney metropolitan region.

10.1 Water management prices

Draft decision

33 IPART's draft decision is to set the maximum water management prices listed in Table 10.1 to Table 10.17.

Table 10.1 to Table 10.17 show the draft prices for each year of the 2016 determination period in $2015-16. They also show the change in draft prices in the final year of the 2016 determination period (2019-20) relative to current 2015-16 prices (in percentage terms). To enable a comparison between our draft prices and those proposed by DPI Water, the tables include the same percentage change if we had accepted its proposed prices.

We set 69 annual water management prices. In general, prices are lower in 2019-20 than 2015-16: 43 prices are lower and 25 prices are higher, with one new price.

Since the 2011 Determination, the changes in cost drivers (cost allocators) combined with the adoption of a new approach to forecast water take for unregulated rivers and groundwater sources mean that a number of prices are changing substantially.

10.1.1 Regulated rivers

Regulated river entitlement prices

Under our draft decision, **entitlement or fixed prices** for regulated river users on a 2-part tariff decrease across most water sources from 2015-16 to 2019-20, with decreases of 33% and 37% in the North Coast and South Coast respectively. Table 10.1 below shows our draft decision on entitlement prices for regulated river users on a 2-part tariff.

Four water sources face price increases, with a maximum increase of 11% in the Gwydir water source over 2015-16 to 2019-20. These water sources face increases because they are currently not at full cost recovery levels. The increases in prices are higher than DPI Water's proposed increases because of our decision to base a 2.5% per year glide path on full cost recovery prices rather than current prices as proposed by DPI Water.

Table 10.1 Regulated river prices – fixed component of 2-part tariff ($2015-16)

Regulated rivers	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	2.32	2.14	2.14	2.14	2.14	-8%	5%
Gwydir	1.37	1.39	1.44	1.48	1.52	11%	10%
Namoi	2.75	2.57	2.57	2.57	2.57	-7%	5%
Peel	2.33	2.26	2.34	2.42	2.50	7%	4%
Lachlan	1.86	1.35	1.35	1.35	1.35	-28%	-16%
Macquarie	1.98	1.60	1.60	1.60	1.60	-19%	-12%
Murray	1.50	1.45	1.45	1.45	1.45	-4%	5%
Murrumbidgee	1.23	1.22	1.26	1.29	1.32	8%	7%
North Coast	5.58	3.71	3.71	3.71	3.71	-33%	-28%
Hunter	2.73	2.69	2.77	2.85	2.92	7%	6%
South Coast	5.00	3.14	3.14	3.14	3.14	-37%	-31%

Regulated river water take prices

For **water take prices,** five water sources will experience price decreases, while six sources face price increases over 2015-16 to 2019-20. Table 10.2 below shows our draft decision on water take prices for regulated river users.

The largest water take price decreases occur in the Lachlan and South Coast water sources, 16% and 11% respectively. Larger than those proposed by DPI Water, the price decreases are a result of our decision to set a lower notional revenue requirement across all water sources.

Peel water source customers will face a water take price increase of 20% over 2015-16 to 2019-20, and customers in the Hunter will experience an increase of 14%. The valleys facing price increases are those currently below full cost recovery levels, the increases are a result of transitioning to full cost recovery prices.

Table 10.2 Regulated rivers prices - water take component of 2-part tariff and water take only licences ($2015-16)

Regulated rivers	Draft Price ($/ML of water take)					Change from 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	1.79	1.67	1.67	1.67	1.67	-7%	6%
Gwydir	1.26	1.20	1.24	1.27	1.31	4%	2%
Namoi	1.88	1.73	1.73	1.73	1.73	-8%	3%
Peel	3.71	4.01	4.16	4.31	4.45	20%	17%
Lachlan	2.14	1.80	1.80	1.80	1.80	-16%	-2%
Macquarie	1.90	1.73	1.73	1.73	1.73	-9%	-1%
Murray	0.97	1.03	1.03	1.03	1.03	7%	15%
Murrumbidgee	0.79	0.81	0.83	0.85	0.88	11%	10%
North Coast	5.54	5.73	5.73	5.73	5.73	3%	7%
Hunter	1.75	1.84	1.89	1.94	2.00	14%	13%
South Coast	5.61	4.98	4.98	4.98	4.98	-11%	-3%

10.1.2 Unregulated rivers

Unregulated river: entitlement component of 2-part tariff

Table 10.3 shows that all unregulated water sources on a 2-part tariff experience considerable decreases in entitlement prices over the period from 2015-16 to 2019-20. The decreases range from 63% in the Murray and Murrumbidgee to 17% in the Far West.

The decrease in unregulated river entitlement charges is the result of two factors. These are our decisions to:

- use forecasts of water take as a cost driver or allocator, and
- adopt lower, updated forecasts of unregulated river water take compared to the 2011 Determination.

We have accepted DPI Water's proposal to use water take to allocate the costs of a number of water management activities across water sources, in place of some allocators used at the previous determination (such as entitlement volumes). We have also adopted lower, updated, forecasts of unregulated river water take compared to the 2011 Determination. In 2011, due to a lack of information, we forecast water take assuming it equated to entitlement volumes.

Using water take to allocate costs and lower water take forecasts for unregulated rivers, combined with DPI Water's overall lower notional revenue requirement, have reduced the user share of DPI Water's costs that are allocated to unregulated rivers.

Table 10.3 Unregulated river prices - fixed component of 2-part tariff ($2015-16)

Unregulated rivers	Draft Price ($/ML of entitlement)					Change from 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	3.73	2.16	2.16	2.16	2.16	-42%	-39%
Gwydir	3.73	2.16	2.16	2.16	2.16	-42%	-39%
Namoi	3.73	2.16	2.16	2.16	2.16	-42%	-39%
Peel	3.73	2.16	2.16	2.16	2.16	-42%	-39%
Lachlan	5.87	2.52	2.52	2.52	2.52	-57%	-55%
Macquarie	5.87	2.52	2.52	2.52	2.52	-57%	-55%
Far West	4.67	3.87	3.87	3.87	3.87	-17%	-10%
Murray	6.77	2.48	2.48	2.48	2.48	-63%	-61%
Murrumbidgee	8.30	3.06	3.06	3.06	3.06	-63%	-61%
North Coast	7.00	4.29	4.29	4.29	4.29	-39%	-34%
Hunter	2.30	1.21	1.21	1.21	1.21	-47%	-41%
South Coast[a]	2.26	1.64	1.64	1.64	1.64	-27%	0%

[a] WaterNSW unregulated licences are subject to a special charge to reflect the MWP costs. See Table 10.15.

Unregulated river: water take component of 2-part tariff

For a given level of costs to be recovered via prices (revenue requirement), lower water take forecasts will result in higher water take prices.

As we have adopted lower water take forecasts for the 2016 determination period (discussed above), water take prices increase for all unregulated water sources except the Hunter and South Coast, which experience decreases over 2015-16 to 2019-20. Table 10.4 shows that the highest water take price increases occur in the Murrumbidgee and North Coast, with increases of 53% and 54% respectively.

However, these **increases in water take prices** occur in tandem with corresponding **decreases in entitlement prices** for unregulated sources on a 2-part tariff.

Table 10.4 Unregulated river prices - water take component of 2-part tariff and water take only licences ($2015-16)

Unregulated rivers	Draft Price ($/ML of water take)					Change from 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	1.60	2.31	2.31	2.31	2.31	44%	52%
Gwydir	1.60	2.31	2.31	2.31	2.31	44%	52%
Namoi	1.60	2.31	2.31	2.31	2.31	44%	52%
Peel	1.60	2.31	2.31	2.31	2.31	44%	52%
Lachlan	2.52	2.73	2.73	2.73	2.73	8%	13%
Macquarie	2.52	2.73	2.73	2.73	2.73	8%	13%
Far West	2.00	2.37	2.37	2.37	2.37	19%	29%
Murray	2.91	3.95	3.95	3.95	3.95	36%	44%
Murrumbidgee	3.55	5.44	5.44	5.44	5.44	53%	61%
North Coast	3.00	4.61	4.61	4.61	4.61	54%	65%
Hunter	2.17	1.98	1.98	1.98	1.98	-9%	1%
South Coast	1.48	1.39	1.39	1.39	1.39	-6%	27%

Unregulated river: 1-part tariff

Entitlement prices for licence holders on a 1-part tariff are the sum of the entitlement price and the water take price for the 2-part tariff. Table 10.5 shows that all unregulated water sources on a 1-part tariff face decreases in their prices over 2015-16 to 2019-20. The Lachlan and Macquarie water sources face the largest decreases in entitlement prices of 37%.

These price decreases are the result of the user share of DPI Water's notional revenue requirement for the 2016 determination period declining when compared to the previous determination period, and a shift in unregulated rivers' share of user costs.

Table 10.5 Unregulated river prices – fixed prices for 1-part tariff ($2015-16)

Unregulated rivers	Draft Price ($/ML of entitlement)					Change from 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	5.34	4.47	4.47	4.47	4.47	-16%	-12%
Gwydir	5.34	4.47	4.47	4.47	4.47	-16%	-12%
Namoi	5.34	4.47	4.47	4.47	4.47	-16%	-12%
Peel	5.34	4.47	4.47	4.47	4.47	-16%	-12%
Lachlan	8.39	5.25	5.25	5.25	5.25	-37%	-35%
Macquarie	8.39	5.25	5.25	5.25	5.25	-37%	-35%
Far West	6.67	6.25	6.25	6.25	6.25	-6%	2%
Murray	9.67	6.42	6.42	6.42	6.42	-34%	-30%
Murrumbidgee	11.85	8.50	8.50	8.50	8.50	-28%	-24%
North Coast	10.01	8.90	8.90	8.90	8.90	-11%	-4%
Hunter	4.48	3.20	3.20	3.20	3.20	-29%	-21%
South Coast	3.74	3.03	3.03	3.03	3.03	-19%	11%

Groundwater

Groundwater: entitlement component of 2-part tariff

Table 10.6 shows that our draft decision results in decreases in entitlement prices ranging from 3% in the Murrumbidgee to 59% in the Coastal water source between 2019-20 and 2015-16.

Prices are lower when compared to 2015-16 prices due to adjustments we made, which reduced the user share of notional revenue requirement below that proposed by DPI Water. There is also a lower share of costs allocated to groundwater than in the 2011 determination period.

The decrease in entitlement prices is less than the decrease proposed by DPI Water. This is the result of our decision to accelerate the move to full cost recovery in areas that are currently not recovering the allocated user share of costs.

Table 10.6 Groundwater prices – fixed component of 2-part tariff ($2015-16)

Groundwater	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-2020	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Inland[a]	4.86	3.61	3.61	3.61	3.61	-26%	-18%
Murrumbidgee	2.47	2.13	2.22	2.31	2.40	-3%	-7%
Coastal	4.07	1.65	1.65	1.65	1.65	-59%	-55%

[a] Excluding Murrumbidgee.

Groundwater: water take component of 2-part tariff

Table 10.7 shows that water take prices for customers in groundwater sources increase in all sources over 2015-16 to 2019-20. This is due to the use of revised water take forecasts, which are lower than those used in the 2011 Determination. Increases in water take prices for groundwater sources range from 40% in the Inland water source to 81% in the Murrumbidgee.

Table 10.7 Groundwater prices – water take component of 2-part tariff and water take only licences ($2015-16)

Groundwater	Draft Price ($/ML of water take)					Change 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Inland[a]	2.09	2.93	2.93	2.93	2.93	40%	55%
Murrumbidgee	1.07	1.72	1.79	1.87	1.94	81%	73%
Coastal	1.85	3.08	3.08	3.08	3.08	66%	84%

[a] Excluding Murrumbidgee.

Groundwater: 1-part tariff

Entitlement prices for groundwater water users on a 1-part tariff are the sum of the 2-part entitlement and water take prices. Table 10.8 shows our draft 2019-20 prices are lower in the Inland and Coastal sources, and higher in the Murrumbidgee source when compared to 2015-16 prices. However, prices in the Murrumbidgee over the 2016 determination period are still below the other two water sources.

Prices in the Murrumbidgee are increasing as this water source is on a glide path towards the prices in the Inland water source.

Table 10.8 Groundwater prices – fixed charges for 1-part tariff ($2015-16)

Groundwater	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Inland[a]	6.95	6.54	6.54	6.54	6.54	-6%	4%
Murrumbidgee	3.53	3.85	4.01	4.18	4.34	23%	17%
Coastal	5.92	4.73	4.73	4.73	4.73	-20%	-11%

[a] Excluding Murrumbidgee.

10.2 Water management prices with floodplain harvesting (FPH)

We have decided to accept DPI Water's proposal to set separate water management prices in a water source, to apply from the 1 July following Ministerial approval to issue all floodplain harvesting (FPH) licences for that water source.

While timing of implementation is unknown, having the provision for FPH licences as a separate pricing schedule will allow the switch to lower water take prices for all users, not just FPH licence holders, during the 2016 determination period.

Under FPH, there will be lower water take prices as forecast water take is higher. Only minor changes would occur to the entitlement charge, given the 70:30 fixed-to-variable constraint is applied to the FPH related prices.[172]

10.2.1 Regulated rivers with FPH

Floodplain harvesting prices may apply to four regulated water sources in the 2016 determination period, depending on Ministerial approval. If these prices were to take effect in the 2016 determination period, Table 10.9 shows that three water sources would experience a decrease. Entitlement charges in the Gwydir would increase as this source is currently below full cost recovery.

[172] The price changes that result from the introduction of FPH will also have an impact on the number of licences subject to the MAC. Lower prices result in more licences on the MAC. Therefore, less revenue is required to be recovered from non-MAC licences, and this may have a minor impact on the entitlement charge for a water source.

Table 10.9 Regulated river prices with FPH – fixed component of 2-part tariff ($2015-16)

Regulated rivers with FPH	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	2.32	2.14	2.14	2.14	2.14	-8%	5%
Gwydir	1.37	1.39	1.44	1.48	1.52	11%	10%
Namoi	2.75	2.57	2.57	2.57	2.57	-7%	5%
Macquarie	1.98	1.60	1.60	1.60	1.60	-19%	-12%

Water take prices for regulated sources with floodplain harvesting apply to the water take component of the 2-part tariff and water take only licences. Table 10.10 shows that, under FPH, all four water sources face lower water take prices ranging from 18% in the Macquarie to 29% in the Namoi water source.

Table 10.10 Regulated river prices with FPH - water take component of 2-part tariff and water take only licences ($2015-16)

Regulated rivers with FPH	Draft Price ($/ML of entitlement)					Change from 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Border	1.79	1.30	1.30	1.30	1.30	-27%	-3%
Gwydir	1.26	1.00	1.00	1.00	1.00	-21%	-2%
Namoi	1.88	1.34	1.34	1.34	1.34	-29%	-5%
Macquarie	1.90	1.56	1.56	1.56	1.56	-18%	-4%

10.2.2 Unregulated rivers with FPH

Table 10.11 shows entitlement prices for unregulated rivers with floodplain harvesting relating to users on a 2-part tariff. These prices would only apply to the Far West water source. Under our draft decision, these prices decrease by 14% over 2015-16 to 2019-20. This is a larger reduction than that proposed by DPI Water.

Table 10.11 Unregulated river prices with FPH - fixed component of 2-part tariff ($2015-16)

Pricing water source – Unregulated rivers with FPH	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Far West	4.67	4.00	4.00	4.00	4.00	-14%	-10%

Table 10.12 shows water take prices for unregulated water sources applying to users on a 2-part tariff. These only apply to users in the Far West. Our draft decision results in a 5% decrease in prices over 2015-16 to 2019-20, compared to DPI Water's proposed increase of 9%. The water take prices with FPH are lower than the prices without the FPH, as water take is higher with FPH (see Table 10.4).

Table 10.12 Unregulated river prices with FPH - water take component of 2-part tariff and water take only licences ($2015-16)

Unregulated rivers with FPH	Draft Price ($/ML of water take)					Change 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Far West	2.00	1.89	1.89	1.89	1.89	-5%	9%

Table 10.13 shows our draft decision on entitlement prices for unregulated water sources with floodplain harvesting on a 1-part tariff. Our draft price is lower than that proposed by DPI Water, and our 2019-20 price is 12% lower than the current 2015-16 price. The FPH price is also lower than the price without FPH (see Table 10.5).

Table 10.13 Unregulated river prices with FPH – fixed charges for 1-part tariff ($2015-16)

Unregulated rivers with FPH	Draft Price ($/ML of entitlement)					Change 2015-16 to 2019-20	
	2015-16 (Current)	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
Far West	6.67	5.89	5.89	5.89	5.89	-12%	-4%

10.3 Minimum annual charge (MAC)

IPART's draft decision to set a minimum annual charge (MAC) to transition from $150 to $200 per licence, per year, over the proposed 4-year determination period is outlined in Chapter 8. The price levels for the MAC are shown in Table 10.14.

Table 10.14 IPART's draft minimum annual charge ($2015-16)

Pricing water source – All	Current	2016-17	2017-18	2018-19	2019-20
Minimum annual charge	105.34	150	167	184	200

10.4 WaterNSW Metropolitan Water Plan levy

As outlined in Chapter 8, we have decided to apply a levy to WaterNSW to recover the costs specific to the development of the Metropolitan Water Plan (MWP) for the Sydney metropolitan region.

The prices for the South Coast unregulated water source have been calculated based on a notional revenue requirement that excluded the costs of the MWP.

The costs of the MWP will be recovered from WaterNSW via a new specific charge. We have set the maximum price on a present value neutral basis to recover MWP costs over the 2016 Determination. The draft price will be charged on the entitlement held by WaterNSW's (see Table 10.15).

Table 10.15 Special entitlement charge for WaterNSW ($2015-16)

Pricing water source – Unregulated rivers	Draft Price ($/ML of entitlement)				Change 2015-16 to 2019-20	
	2016-17	2017-18	2018-19	2019-20	IPART Draft	DPI Water proposed
South Coast	0.85	0.85	0.85	0.85	na	na

Note: WaterNSW unregulated licences are subject to a special price that reflects MWP costs. The charge is payable in addition to the standard entitlement charges for South Coast unregulated rivers in Table 10.3.

10.5 Revenue recovered from users through prices (target revenue)

Our draft water management prices are either set at the full cost recovery price (FCRP) level, or are deliberately allowed to be at a level below the FCRP level for some water sources.

The total revenue recovered from users through water management charges (revenue from 1- and 2-part tariffs and minimum annual charges) is called **'target revenue'**.

The share of target revenue as a percentage of the user share of notional revenue requirement (NRR) is called 'the level of cost recovery'. The shortfall is funded by the Government effectively as a community service obligation (CSO). We evaluate the level of cost recovery and the amount of CSO, to establish the impact of our pricing decisions on DPI Water, in Chapter 13.

Our draft prices result in the target revenue and levels of cost recovery by water source presented in Table 10.16.

Table 10.16 IPART's draft decision on DPI Water's target revenue and level of cost recovery by water source ($million, $2015-16)

Water source	User share of NRR (total over 2016-17 to 2019-20)	Target revenue (total over 2016-17 to 2019-20)	Level of cost recovery, %
Regulated rivers			
Border	3.3	3.3	100%
Gwydir	5.2	4.6	88%
Namoi	4.0	4.0	100%
Peel	0.9	0.7	78%
Lachlan	5.9	5.9	100%
Macquarie	6.5	6.5	100%
Murray	21.0	21.0	100%
Murrumbidgee	21.4	20.3	95%
North Coast	0.2	0.2	100%
Hunter	4.0	3.7	93%
South Coast	0.3	0.3	100%
Sub-total	72.7	70.4	97%
Unregulated rivers			
Border	1.2		
Gwydir	1.0	5.0	100%
Namoi	2.0		
Peel	0.8		
Lachlan	1.7	5.2	100%
Macquarie	3.5		
Far West	5.2	5.2	100%
Murray	1.2	1.2	100%
Murrumbidgee	3.2	3.2	100%
North Coast	9.3	9.3	100%
Hunter	6.6	6.6	100%
South Coast	16.7	16.7	100%
Sub-total	52.4	52.5	100%
Groundwater			
Inland	33.0	30.0	91%
Costal	8.0	8.0	100%
Sub-total	40.9	38.0	93%
Total	166.1	160.8	97%

Note: Includes the user share of MDBA and BRC contributions.

Source: IPART Calculations.

The effect of our draft decisions on DPI Water's revenue requirement and funding required from the Government are summarised in Table 10.17.

User share is 72% of NRR over the 4-year determination period, with 97% of user share recovered through prices (target revenue). The CSO is $5.2 million, or 3% of the user share of NRR over the 4-year determination period.

Total funding required from the Government is $69.1 million, including the government share of $63.9 million and the CSO of $5.2 million over the 4-year determination period.

Table 10.17 IPART's draft decision on DPI Water's target revenue and community service obligation ($ million, $2015-16)

	2016-17	2017-18	2018-19	2019-20	Total over 2016-17 to 2019-20
Notional Revenue Requirement					
User share	41.9	41.8	41.5	40.8	166.1
Government share	16.3	16.2	15.9	15.5	63.9
Total	**58.2**	**58.0**	**57.4**	**56.3**	**229.9**
Target Revenue	39.5	40.1	40.5	40.7	160.8
Community Service Obligation	2.5	1.7	1.0	0.1	5.2

11 Metering service charges, meter reading charges and ancillary service charges

DPI Water provides water take measurement (or metering) services to licence holders in unregulated rivers and groundwater water sources (in regulated rivers the services are undertaken by WaterNSW).

At the 2011 determination, we decided that ongoing metering costs should be recovered via separate charges.[173] As such, these costs are not included in the general operating expenditure base and are not recovered from all users via water management charges.

For the 2016 determination period, DPI Water has proposed three categories of water take measurement charges:

- meter service charges
- water take reading/assessment charges, and
- ancillary service charges.

This chapter discusses our draft decisions on meter service charges, meter reading charges and ancillary service charges.

11.1 Meter service charges

Meter service charges apply to **government-owned water meters**, and recover the efficient cost of operating, maintaining and in some cases reading the meter. These charges are levied annually.

Draft decision

34 IPART's draft decision on meter service charges is listed in Table 11.1. We have:

– Set charges based on meter size, but not differentiated charges by meter size to the extent proposed by DPI Water (ie, we have adopted a flatter charge schedule).

[173] IPART, *Review of prices for the water administration ministerial corporation – Determination and Final Report,* February 2011, Chapter 10.

- Accepted DPI Water's proposed structuring of meter charges based on two categories: (1) telemetered/non-telemetered and agency read, and (2) non-telemetered customer read sites.
- Applied a 1.5% efficiency adjustment to meter service charges, relative to DPI Water's proposal.

Table 11.1 Draft decision on meter service charges ($2015-16)

Meter size (mm)	Telemetered or agency read sites (annual charge per site)	Non-telemetered sites with customer reading and reporting (annual charge per site)
50-300	481	378
350-700	500	392
750-1000	544	426

In calculating the prices, we have also incorporated the 1.5% annual efficiency adjustment as recommended by Synergies in its proposed prices, which was to apply over the final three years of the determination.

Reasons for our decisions

There are three key elements of our draft decisions on meter service charges:

- the relationship between meter charges and meter size
- the relationship between meter charges and telemetered or agency read sites and non-telemetered sites with customer reading, and
- our efficiency adjustments to DPI Water's proposed meter servicing costs.

Meter charges and meter size

DPI Water's current meter service charges are differentiated by metering and telemetry technology, with the most common charge in 2015-16 being $403.61 per meter for electromagnetic meters with a data logger and mobile data modem.[174] There are currently six different meter service charges based on meter type, as outlined in Table 11.2 below.

Table 11.2 Current 2015-16 meter service and reading charges ($2015-16)

Meter type	Charge
Mechanical meter – with data logger	$236.18
Electromagnetic meter – with data logger	$309.36
Electromagnetic meter – with data logger and mobile data modem	$403.61
Electromagnetic meter – with data logger and satellite data modem	$752.89
Channel meter – with mobile phone or satellite telemetry coverage	$752.89
Other	$236.18

Source: http://www.water.nsw.gov.au/water-licensing/metering/metering-charges, accessed 29 January 2016.

[174] Synergies Final Report, January 2016, p 155.

DPI Water stated that the larger meters cost more to remove and re-install. It commented that on occasion the meter body has to be accessed, which is usually more difficult with bigger meters and hence more costly.[175]

In general, we recognise that there is a link between meter size and servicing cost.

DPI Water's proposed meter service charges would result in substantially different charges for different size meters (see Table 11.3). However, its proposed charges did not align with its observation in its submission that unit costs vary from $489 a year for a 50-millimetre meter to $555 a year for an 800-millimetre meter.[176]

Table 11.3 DPI Water proposed meter service charges – ($2015-16)

Meter size (mm)	DPI Water proposed 2016-17	DPI Water proposed 2017-18 onwards	DPI Water proposed 2016-17	DPI Water proposed 2017-18 onwards
	Telemetered or agency read sites		Non-telemetered sites with customer reading and reporting	
50	$396.77	$446.84	$286.34	$328.59
80	$396.90	$447.00	$286.48	$328.74
100	$397.66	$447.85	$287.24	$329.60
150	$418.28	$471.08	$307.86	$352.82
200	$440.69	$496.31	$330.27	$378.06
250	$446.34	$502.67	$335.92	$384.42
300	$448.33	$504.91	$337.91	$386.66
350	$460.85	$519.02	$350.43	$400.77
400	$512.97	$577.72	$402.55	$459.46
450	$621.04	$699.42	$510.62	$581.17
500	$630.41	$709.98	$519.99	$591.72
600	$664.43	$748.29	$554.01	$630.04
700	$678.05	$763.63	$567.63	$645.38
750	$679.72	$765.51	$569.30	$647.26
800	$717.41	$807.96	$606.99	$689.71
900	$771.45	$868.81	$661.03	$750.56
1000	$776.91	$874.96	$666.48	$756.71

Source: DPI Water submission to IPART, September 2015, pp 245-246.

[175] DPI Water, email communication, 22 January 2016.
[176] DPI Water submission to IPART, September 2015, p 244.

After reviewing DPI Water's proposed charges, our expenditure review consultant, Synergies, proposed a much flatter charging structure. Synergies commented in its report that the competitively procured contract for meter servicing should be used to set charges. In order for charges for each meter size to be cost reflective, Synergies argued that they need to mirror the differences in cost to DPI Water, as per this contract.[177]

However, we noted that between many meter sizes there were very minor cost differentials and in some cases inconsistencies in Synergies' proposed prices that did not reflect that larger meters incur higher costs. These stemmed from the unit rates in the contract. We consider that Synergies' proposed prices are not consistent with cost-reflective charges, and imply a level of precision that may not be an accurate reflection of costs. We could not find any evidence to support the non-linearity of Synergies' proposed prices.

To address these issues, we decided to group meter service charges into three groups by meter size, with each group having a common charge. This will retain an appropriate degree of cost reflectivity with larger meter sizes paying higher charges.

Telemetered or agency read sites vs non-telemetered sites with customer reading and reporting

As shown in Table 11.3 above, DPI Water proposed:

- one schedule of meter service charges if a meter is **telemetered or agency read**, and
- another schedule of meter service charges if a meter is **non-telemetered and customer read**.

The different charge for each site reflects the different cost of servicing these sites including telemetry operation, maintenance and meter reading costs.

Meter service charges only apply to government-owned meters, with the cost of reading these meters incorporated in the meter service charge. Charges for water take reading/assessment discussed below recover DPI Water's costs of meter reading or determining water take for privately owned meters. There is therefore no overlap between these charges.

[177] Synergies Final Report, January 2016, p 160.

Our efficiency adjustment

Synergies recommended that an efficiency adjustment of 1.5% be applied when indexing meter service charges over the 2016 determination period. We decided to accept Synergies' findings and apply an efficiency adjustment to meter service charges in each of the last three years of the determination period. However, we decided to calculate charges on a present value neutral basis, holding the charge constant in real terms over the 2016 Determination.

The revenue expected to be recovered from our draft meter service charges is equivalent to that proposed by Synergies. We estimated total annual revenue at around $568,000 per year.

11.2 Water take reading/assessment charges

Water take reading/assessment charges apply to water users in unregulated river and groundwater water sources where meters are read, or water take is otherwise determined by DPI Water. The charge only applies to **privately owned** meters where the meter is not telemetered and the customer does not supply the reading. The charge recovers DPI Water's cost of measuring water take. DPI Water contracts WaterNSW to read meters in inland NSW on its behalf.[178]

Draft decision

35 IPART's draft decision is to accept DPI Water's water take reading/assessment charge, subject to an efficiency adjustment of 1.5% as shown in Table 11.4.

We have applied a 1.5% adjustment, as recommended by Synergies, to the water take reading/assessment charges on a present value neutral basis.

Table 11.4 Draft decision on water take reading/assessment charges ($2015-16)

Charge	2016-17	2017-18	2018-19	2019-20
IPART's draft decision	$193.76	$193.76	$193.76	$193.76

[178] DPI Water submission to IPART, September 2015, p 249.

Reasons for our decision

Synergies found that DPI Water's proposed water take reading/assessment service charges reasonably reflect the efficient incremental costs of this service. Synergies recommended that we accept DPI Water's proposed charges, subject to a 1.5% efficiency adjustment when indexing prices over the regulatory period.

In general, we agree with Synergies' findings. We have calculated the water take reading/assessment charges on a present value neutral basis, holding the charge constant in real terms over the 2016 determination period. This approach ensures the revenue recovered over the determination from constant prices is equivalent to that proposed by Synergies, in present value terms.

Our draft charge of around $194 is lower than DPI Water's proposed charge of $198 due to the incorporation of the efficiency adjustment. Based on the current number of sites subject to the charge, this would result in total revenue of approximately $1.53 million per year, however we note that the number of sites is expected to decline.[179]

DPI Water's proposed charge and our draft charge is lower than DPI Water's current meter reading charge of $212.90.[180]

11.3 Ancillary service charges

Ancillary services are rarely used and are billed on a fee for service basis. DPI Water's proposed charges relate to meter laboratory verification, meter in-situ validation and meter restarts:

- **Meter laboratory verification** - occurs where the meter is tested to confirm accuracy.
- **Meter in-situ validation** - involves validating a meter that has been relocated or disturbed by non-government agency staff.
- **Meter restart** - involves technical work to re-activate a suspended water meter.

[179] DPI Water submission to IPART, September 2015, p 249, and IPART calculations.
[180] http://www.water.nsw.gov.au/water-licensing/metering/metering-charges, accessed 2 March 2016.

Draft decision

36 IPART's draft decisions on ancillary service charges are listed in Table 11.5. These charges are as proposed by DPI Water.

Table 11.5 Draft decision on ancillary service charges ($2015-16)

Ancillary Service	Charge
Meter laboratory verification at request of customer (refundable if meter is tested to be outside the accuracy standard)	$1,751.40
Meter in-situ validation charge – where a meter is moved or disturbed	$240.00
Meter reset fee after suspension of maintenance for a year or more, at customer request	$240.00 plus cost of parts

Reasons for our decision

DPI Water proposed to retain ancillary charges, with the inclusion of a new meter restart charge. DPI Water's current ancillary charges (set at the 2011 Determination) and its proposed ancillary charges for the 2016 determination period are listed in Table 11.6 below.

Table 11.6 DPI Water's current and proposed meter service charges ($2015-16)

	Current Charge	DPI Water Proposed Charge
Meter laboratory verification at request of customer (refundable if meter is tested to be outside the accuracy standard)	$1,665.38	$1,751.40
Meter in-situ validation charge – where a meter is moved or disturbed		
Mechanical meter or other	$116.42	$240.00
Electromagnetic meter or channel meter with mobile phone	$216.22	$240.00
Meter reset fee after suspension of maintenance for a year or more, at customer request	NA	$240.00

Source: DPI Water submission to IPART, September 2015, p 249, and http://www.water.nsw.gov.au/water-licensing/metering/metering-charges, accessed 11 February 2016.

DPI Water stated that its proposed meter validation charge is based on the cost of a contractor visiting the site, which is estimated at $240 ($2015-16) per visit for travel and time at the site. Similarly, DPI Water based the meter restart charge on the cost of a contractor visiting the site, which it estimated at $240 ($2015-16) per visit for travel and time at the site plus the cost of replacing any parts. The cost of parts is in addition to the charge.

We note that DPI Water proposed a single meter in-situ validation charge of $240 in its submission, whereas this charge is currently differentiated by meter type, based on whether a meter is a:

- mechanical meter or other, or
- electromagnetic meter or channel meter with mobile phone.

We consider that the cost drivers of meter validation are travel and time at the site, rather than the type of meter. We have therefore decided to accept DPI Water's proposed single meter in-situ validation charge. The contracted costs of meter validation reflect the costs of providing this service.

In the case of meter laboratory testing, DPI Water stated that in the one instance where this service had been requested, the cost of meter removal, lab testing and meter replacement was well in excess of the deposit. DPI Water commented that it was not requesting an increase in the charge,[181] however according to DPI Water's published prices on its website the current charge is $1,665.38.[182] This represents an increase of around $86. Despite this, we have decided to accept DPI Water's proposed charge given the rarity of requests and on the basis that it did not recover its costs in the last case where it provided this service.

[181] DPI Water submission to IPART, September 2015, pp 248-249.

[182] http://www.water.nsw.gov.au/water-licensing/metering/metering-charges, accessed 11 February 2016.

12 Consent transaction charges

Water consent transaction charges recoup DPI Water's efficient costs of issuing and amending water access licences, performing water allocation assignments and works approvals.

- For water access licences, DPI Water's activities include issuing new licences and amending existing licences under the *Water Management Act 2000* (NSW).
- For water allocation assignments, DPI Water's activities include assigning water from one licence's account to another licence's account (commonly referred to as temporary trade) for unregulated and groundwater water sources.
- For works approvals, DPI Water's activities include assessing and approving the construction and use of water supply works such as pumps, dams and bores, and for the application of water to the land.

In total, DPI Water forecasts around 6,000 consent transactions per year over the 2016 determination period, which would require 17.5 FTE staff per year and an annual operating expenditure of $2.07 million ($2015-16).[183]

The following sections set out IPART's draft decisions on consent transaction charges.

12.1 Consent transaction charges

Draft decisions

37 IPART's draft decision on DPI Water's consent transaction charges is shown in Table 12.1. These charges are as proposed by DPI Water, except for:

- three charges (regulated rivers dealings, unregulated rivers and groundwater low risk dealings, and water allocation assignments) where we made adjustments, and
- a 1.5% efficiency adjustment applied each year.

38 IPART has not accepted DPI Water's proposed fee variations for:

- rounding fees to the nearest dollar, and
- recovering future title register search costs.

[183] DPI Water submission to IPART, September 2015, p 16; Synergies Final Report, January 2016, pp 143-144.

Table 12.1 Draft decision on consent transactions charges ($2015-16)

Consent transaction activity	Charge per transaction	
	No online lodgement	Online lodgement
Any new water access licence		
Zero share	322.47	288.71
Controlled allocation	322.47	288.71
Other	322.47	288.71
Water access licence dealings		
Dealings – regulated rivers	347.93	315.66
Dealings – unregulated rivers and groundwater	1,044.87	1,011.11
Dealings – unregulated rivers and groundwater with low risk	492.20	459.94
Dealings – administrative	237.61	203.85
Water allocation assignments		
Unregulated rivers and groundwater	347.93	315.66
Approvals		
New or amended works and/or use approval	1,924.63	1,890.87
New or amended works and/or use approval – low risk	1,040.36	1,006.60
New basic rights bore approval	398.06	364.30
Amended approval – administrative	237.61	203.85
Extension of approval – lodged before expiry date	240.55	206.79
Extension of approval – lodged after expiry date	400.92	NA

Note: The consent transaction charges were calculated on a present value neutral basis. This approach ensures the revenue recovered over the determination from constant prices is equivalent to that proposed by Synergies (IPART's expenditure consultant). We have included the 1.5% annual efficiency adjustment in this calculation.

Source: IPART adjustments based on DPI Water submission to IPART, September 2015, Table 9.4, pp 240-241.

12.2 Reasons for draft decision

Our draft decision on consent transaction charges is largely based on the recommendations of Synergies, our consultant. Synergies reviewed DPI Water's proposed consent transaction charges and found they were developed with some rigour. However, Synergies identified scope for future efficiency improvements and recommended a 1.5% per year efficiency adjustment to DPI Water's consent transaction costs (and hence charges). We have also made some minor adjustments to align the charges with DPI Water's cost model.

An overview of how DPI Water derived its proposed consent transaction charges (which are presented in Appendix E), along with Synergies assessment of these charges is presented in the section below. This is followed by IPART's assessment of DPI Water's proposed fee variations.

12.2.1 DPI Water's approach to setting consent transaction charges

DPI Water's consent transaction charges are priced on a 'fee-for-service' user pays basis. The charges were priced by:

- estimating the time taken at each step/process of the transaction
- multiplying the time taken by the applicable hourly labour costs, and
- adding any other direct costs, such as advertising or interpreter services (see Appendix E).

We note that NSW Irrigators' Council supports DPI Water's approach to setting consent transaction charges, but raised concerns about the efficiency of the underlying costs.[184]

Synergies examined the time and hourly cost rates allocated to each step/process for thirteen types of consent transactions. Synergies found that the charges were "developed with some rigour, and incorporate productivity improvements and better resource allocation".[185]

In addition to the reasonableness of the costs, Synergies benchmarked whether the charges are efficient. It found DPI Water achieved "a reasonable improvement in productivity" in processing these transactions and that the proposed costs are reasonable when compared with other public and private sector counterparts' administration costs.[186]

However, Synergies identified scope for future efficiency savings and recommended a 1.5% efficiency adjustment per year to account for these future savings, which we have adopted in our draft decision.

We have also adjusted the charges for regulated river dealings, unregulated rivers and groundwater – low risk dealings, and water allocation assignments. We found that these three charges did not reflect the costs and hours allocated to completing the consent transaction in DPI Water's model. Our adjustments increased the consent transaction charge for regulated river dealings by around $26 and water allocation assignments by around $69. Our adjustments had a mixed effect on the charge for unregulated and groundwater – low risk dealings, with a decrease of around $12 for the standard charge, and an increase of around $2 for the charge with online lodgment.

[184] NSW Irrigators' Council submission to IPART Issues Paper on Review of prices for the Water Administration Ministerial Corporation for the NSW Office of Water – from 1 July 2016, October 2015, p 18.

[185] Synergies Final Report, January 2016, p 150.

[186] Synergies Final Report, January 2016, pp 148-150.

12.2.2 Fee variations to consent transaction charges

DPI Water proposed five types of fee variations to consent transaction charges. We have accepted the variations for online lodgement discount and extension of approvals lodged after expiry date, but not the variations for rounding and the recovery of title register search costs. We have not made a decision on Aboriginal fee waivers as it is a matter for the NSW Government.

Table 12.2 summarises the fee variations and our assessment. Aboriginal fee waivers and recovery of title register search costs are discussed in more detail below.

Table 12.2 IPART assessment of proposed fee variations

Variation	Description	IPART assessment
On-line lodgement discount	A discount equivalent to half an hour of time of an administrative officer on all fees that are lodged and paid for online.	We consider this is cost-reflective and included the discount in our draft decision as shown in Table 12.1.
Extension of approval lodged after expiry date	Applications for extensions of approvals lodged after their expiry date are charged a 67% higher fee to recover the additional costs incurred by DPI Water in processing late applications.	We consider this variation is reasonable as it is based on additional costs associated with the assessment of late lodgements.
Aboriginal water licence fee waiver	No fees to apply for applications associated with Aboriginal specific purpose access licences, and dealings relating to the use and access of water by Aboriginal people in regard to Aboriginal cultural, Aboriginal community development and Aboriginal commercial licences, and for work approvals nominated by those categories of licences.	No waiver has been determined. Community Service Obligations (CSO), including the funding of social policies, should be a matter for the Government.
Rounding	For practical purposes, DPI Water proposes to round its fees to the nearest dollar.	We do not consider this to be cost-reflective and have set our draft charges to the nearest cent.
Recovery of title register search costs fee	DPI Water is required to confirm the right of an applicant to apply through a search of the water licence or land title register administered by Land and Property Information NSW (LPI) LPI has indicated it is considering requiring a fee for each search. Should this occur, DPI Water proposes to pass the cost of the search on to the applicant.	A cost pass through mechanism is not appropriate for this circumstance.

Source: DPI Water submission to IPART, September 2015, p 241.

Aboriginal water licence fee waiver

We have not a received section 16A direction from the Minister to pass through the efficient costs of the policy regarding the fee waiver. In absence of such a direction, we have set cost-reflective maximum prices for WAMC's monopoly services.

On 13 February 2014, the Treasurer gave the Minister for Primary Industries (the Minster) his approval, under section 18(2) of IPART Act, to fix prices below those determined by IPART. The fee waiver is to apply from 1 July 2014. Our decision allows DPI Water to continue to apply a waiver under this type of approval.

We note that consent transaction charges are set separately from water management prices, on an efficient incremental cost basis. Hence, there is no impact on water management prices from the Minister's decision to implement a fee waiver for the Aboriginal specific purpose licences. There will be a shortfall in revenue raised through consent transaction charges, representing the cost of the policy to waive application fees related to the Aboriginal specific purpose licences.

IPART's approach to funding Community Service Obligations (CSO) is that funding of social policies should be a matter for the Government (rather than something IPART implements through prices).

Recovery of title register search costs fee

DPI Water proposed a pass through of costs that might be introduced in the future by Land and Property Information (LPI) to search the Water Access Licence (WAL) Register and/or land title register administered by LPI. DPI Water is required to confirm the right of an applicant to apply for a particular transaction by conducting such searches. Currently, DPI Water is not charged by LPI for these searches.

Our draft decision is to not accept DPI Water's proposed cost pass through. The timing and rate of potential costs can be directly influenced by DPI Water through its interactions with LPI. Additionally, the efficient costs of title searches by LPI have not been established.

To consider inclusion of these costs in any consent transaction fees, we would require DPI Water to provide additional information on the efficient costs of LPI searches. This would include what types of consent transactions are subject to the title search fees. DPI Water has not provided sufficient evidence to enable us form a judgement on the likelihood, timing and efficient cost of the introduction of the search charges during the 2016 Determination.

For us to consider including these costs in the 2016 Determination, DPI Water would need to provide sufficient information in its submission in response to this Draft Report.

Alternatively, if DPI Water commences paying for LPI title search costs during the 2016 Determination, IPART can assess these costs at the next price review.

12.3 Impact of IPART's draft decision on consent transaction charges

Most of DPI Water's proposed fees are materially lower than current fees. Of the fourteen standard consent transaction charges, nine are proposed to decrease. In addition, there are also substantial reductions for online lodgement.

However, we estimate that revenue from consent transaction charges in 2016-17 would remain approximately the same as in 2014-15, at around $2.03 million. This is due to higher fees for two activities, which are expected to account for 76% of all transactions:

- approval for a new basic rights bore - from around $254 to $398 per transaction or a 57% increase, and
- extension of approvals lodged before expiry date - from around $170 to $241 per extension or a 42% increase.

DPI Water proposed a revenue requirement from consent transaction charges of $2.07 million per year ($2015-16). After including our 1.5% efficiency adjustment, we estimate DPI Water's revenue from consent transaction charges would decrease to $2.03 million per year ($2015-16). This does not take into account potential fee variations discussed above.

13 Impacts of prices

Before finalising our draft pricing decisions, we considered the impact of our draft maximum prices on water users and DPI Water. Unlike the previous chapters, our analysis of prices and bills are presented in nominal terms and includes the forecast effects of inflation (unless stated otherwise). We do this to facilitate consideration of impacts by users.

We also considered our draft prices in the context of the matters listed in section 15 of the IPART Act (see Appendix A).

Our draft prices directly affect the amount paid annually by licence holders. The bill impact for a particular licence depends on the volume of entitlement, the water take activation rate for the share component on a licence, and whether it is subject to the minimum annual charge (MAC). We have analysed a range of entitlement volumes and activation rates across all water sources. This allows us to assess the differential impact of our draft prices against current prices, DPI Water's proposed prices and the impact of DPI Water charges on farm budgets.

In addition, we have also considered the impact of our draft prices in relation to:

- water users, following the implementation of floodplain harvesting licences
- regulated river licensees, who pay WaterNSW's bulk water charges
- DPI Water costs relative to potential returns to water licences, and
- the level of cost recovery by DPI Water.

Overall, we consider the draft prices achieve a reasonable balance between effects on water users, economic efficiency, the environment and DPI Water.

13.1 Impact on licence holders

Draft decision

39 We have assessed the impact of our draft prices on water users and consider the impact reasonable.

Reasons for decision

Impact on 2-part tariff customers not on the minimum annual charge

To analyse the bill impacts of our draft decision, we have defined a typical licence using the median entitlement and average water activation rate for each water source. This analysis excludes the impact of the floodplain harvesting charges.

Our analysis shows that in the last year of the 2016 determination period, the typical bill will be lower for 17 of the 26 water sources, compared with 2015-16 prices.

For each water type:

- Regulated valleys: the typical bill will increase by around 20% for the Gwydir, Peel, Hunter and Murrumbidgee water sources (Table 13.1). For the Border, Namoi and Murray water sources, the typical bill will increase by less than inflation. The typical bill for the remaining four water sources will experience a decrease.
- Unregulated valleys: the typical bill for all water sources will decrease, except for the Far West water source (Table 13.2).
- Groundwater: the typical bill for Coastal and Inland areas will decrease by 42% and 5%, respectively. However, the typical bill for the Murrumbidgee sub-area of the Inland groundwater source will increase by 24% as it is currently below full cost recovery (Table 13.3).

We note that, except in six water sources, the typical bill is less than DPI Water's proposal, when comparing the impact of our draft prices between 2015-16 and 2019-20.[187]

[187] As shown in Tables 13.1 to 13.3, the six water sources are: the regulated Gwydir, Peel, Murrumbidgee and Hunter water sources, the unregulated Hunter water source and the Murrumbidgee sub-set of the inland groundwater source.

Table 13.1 Forecast typical bill for regulated rivers ($nominal) – including inflation

	Median entitlement volume (ML)	Average water activation rate (%)	2015-16 typical bill ($)	2019-20 typical bill ($)	Impact of IPART's draft decision	Impact of DPI Water proposed prices
Border	136	35%	401	407	2%	15%
Gwydir	972	35%	1,760	2,110	20%	18%
Namoi	246	49%	903	923	2%	15%
Peel	120	24%	386	471	22%	18%
Lachlan	272	31%	686	569	-17%	-3%
Macquarie	196	37%	526	484	-8%	0%
Murray	221	54%	447	486	9%	18%
Murrumbidgee	380	59%	645	768	19%	18%
North Coast	120	6%	709	535	-25%	-19%
Hunter	118	47%	419	501	19%	18%
South Coast	141	26%	911	686	-25%	-17%

Note: The impact is measured as difference between the typical bill using current 2015-16 prices and the typical bill using the relevant 2019-20 prices, ie, IPART draft or DPI Water proposed.

For **regulated water sources**, we estimate the change in the typical bills would vary significantly between water sources: from around -25% (North and South Coast) to around +20% (Gwydir, Peel, Murrumbidgee and Hunter).

The typical bill in Gwydir, Peel, Murrumbidgee and Hunter is higher under our draft decision than under DPI Water's proposal because we have targeted a higher level of cost recovery than DPI Water (see section 13.5). The level of cost recovery ranges from 70% to 88% for these water sources in 2016-17. For these water sources, our decision to set an accelerated path towards full cost recovery results in increased prices.

For the remaining seven water sources, changes in the typical bills are less than inflation and DPI Water's proposal.

Table 13.2 Forecast typical bill for unregulated rivers ($nominal) – including inflation

	Median entitlement volume (ML)	Average water activation rate (%)	2015-16 typical bill ($)	2019-20 typical bill ($)	Impact of IPART's draft decision	Impact of DPI Water proposed prices
Border	97	40%	422	327	-23%	-18%
Gwydir	109	40%	474	367	-23%	-18%
Namoi	135	40%	590	457	-23%	-18%
Peel	65	40%	284	220	-23%	-18%
Lachlan	75	38%	512	293	-43%	-40%
Macquarie	75	40%	516	297	-42%	-40%
Far West	142	70%	862	863	0%	9%
Murray	107	27%	808	416	-49%	-46%
Murrumbidgee	60	24%	549	288	-48%	-45%
North Coast	45	40%	369	303	-18%	-12%
Hunter	88	26%	252	220	-13%	-26%
South Coast	99	50%	297	254	-15%	18%

Note: The impact is measured as difference between the typical bill using current 2015-16 prices and the typical bill using the relevant 2019-20 prices, ie, IPART draft or DPI Water proposed.

For all **unregulated water sources**, we estimate the typical bill will reduce by around 13% (South Coast) to 49% (Murray) over the 2016 determination period, except for the Far West. We estimate that the typical bill for the Far West water source would remain flat during this period.

Our draft prices have resulted in lower typical bills in all valleys when compared to DPI Water's proposal, except for the Hunter. This is because of the impact of IPART's draft minimum annual charge. For the Hunter, the typical bill would be subject to the minimum annual charge between 2017-18 and 2019-20.

Table 13.3 Forecast typical bill for groundwater sources ($nominal) – including inflation

	Median entitlement volume (ML)	Average water activation rate (%)	2015-16 typical bill ($)	2019-20 typical bill ($)	Impact of IPART's draft decision	Impact of DPI Water proposed prices
Inland	188	52%	1,118	1,060	-5%	5%
Murrumbidgee	188	52%	569	704	24%	18%
Coastal	93	23%	418	241	-42%	-36%

Note: The typical bill excludes the impact of floodplain harvesting charges.

For **groundwater sources**, we estimate the typical bill will reduce by around 42% for the Coastal area, which is greater than the decrease proposed by DPI Water. For the Inland groundwater source, we estimate the typical would decrease by 5%, rather than increase by 5%, as proposed by DPI Water.

For the Murrumbidgee sub-area, we estimate the typical bill will increase by 24%. This increase is more than what DPI Water Proposed (18%), largely because of our decision to transition at a faster rate towards full cost recovery for the Murrumbidgee sub-area.

Impact on WaterNSW in the unregulated South Coast water source

We have also analysed the impact of our draft prices on WaterNSW. The impact on WaterNSW is different from other South Coast unregulated customers due to our decision to impose a special price on licences held by WaterNSW, to cover the costs of the Metropolitan Water Directorate (MWD).

We estimate that our draft decision increases the entitlement charge on WaterNSW by an additional $0.87 (or 53%) per ML in 2016-17.[188] However, this increase is offset by our proposed reductions to the entitlement charge and water take charge for the South Coast water source.

Overall, we estimate WaterNSW's bill would increase from around $3.0 million to $3.5 million (or 17%) between 2014-16 and 2019-20, as summarised in Table 13.4 below. This is around $60,000 less than the bill under DPI Water's proposal in 2019-20.

Table 13.4 IPART estimate of WaterNSW's bill ($nominal) – including inflation

	2015-16	2016-17	2017-18	2018-19	2019-20
Entitlement charge (MWD related) ($/ML)	na	0.87	0.89	0.91	0.93
Entitlement charge ($/ML)	2.26	1.67	1.72	1.76	1.8
Water take charge ($/ML)	1.48	1.41	1.45	1.49	1.52
Entitlements ('000s of ML)	987	987	987	987	987
Water take ('000s of ML)	524	529	535	539	545
Total bill ($ million)	**3.0**	**3.3**	**3.3**	**3.4**	**3.5**

Source: IPART Calculations.

Impact of IPART's minimum annual charge

Our draft decision to increase the MAC, from $153 in 2016-17 to $220 in 2019-20,[189] will increase the number of licences paying the MAC, from 16,236 in 2015-16 to 22,205 by 2019-20. This represents an increase of 5,969 licences or 36.7% over the 2016 determination period.

[188] The entitlement charge for the regulated South Coast water source is $1.67 per ML in 2016-17.
[189] In 2015-16 dollars, the increase is from $150 to $200 over this period.

The additional 5,969 licences subject to the MAC will incur an increase equal to the difference between their current bill and the proposed MAC. For licences currently subject to the MAC, our draft decision equates to a $114 increase in their minimum annual bill between 2015-16 and 2019-20.

The increase in the draft MAC in 2019-20 is $52 higher than that proposed by DPI Water ($165). We estimate that our draft MAC would increase the number of licences subject to the minimum bill by around 2,000, and would increase the minimum bill revenue from these licence holders by around $55,000, or an average of $27.5 per licence in 2019-20.

Impact on 1-part tariff customers

We note that nearly half of all 1-part tariff customer bills are paying the minimum annual charge of $105 per year in 2015-16.

Over the 2016 determination period, we estimate that the number of 1-part tariff customers on the MAC would increase:

- from 6,400 to 9,350, or 46% to 67%, of all 1-part tariff bills for unregulated water sources, and
- from 2,350 to 3,350, or 49% to 70%, of all 1-part tariff bills for groundwater sources.

This means that most 1-part customer bills would increase by up to $114 between 2015-16 and 2019-20, based on IPART's price path for the MAC.

For larger customers on the 1-part tariff, DPI Water's metering strategy should result in more 1-part tariff customers having the option to move to the 2-part tariff pricing structure. Larger customers on the 1-part tariff can possibly reduce their bill by changing their tariff category, depending on their water take.

Impact of the new floodplain harvesting charges

Our analysis indicates the introduction of floodplain harvesting charges in a water source will reduce the typical bill for non-floodplain harvesting licences in that water source. As shown in Table 13.5, a user with a typical bill in a water source with floodplain harvesting would be better off by around 3% to 6% over the 2016 determination period.

Table 13.5 Impact of IPART's draft decision on floodplain harvesting charges (FPH) on non-FPH typical bills ($nominal) – including inflation

Water source	No FPH		With FPH		Impact of FPH	
	2016-17	2019-20	2016-17	2019-20	2016-17	2019-20
Regulated						
Border	378	407	360	387	-5%	-5%
Gwydir	1,798	2,110	1,728	1,995	-4%	-5%
Namoi	857	923	810	872	-5%	-6%
Macquarie	449	484	436	470	-3%	-3%
Unregulated						
Far West	802	863	771	831	-4%	-4%

Note: The figures for 2016-17 are indicative only. DPI Water expects floodplain harvesting licences to be phased in between 2016-17 and 2017-18.

Source: IPART Calculations.

We estimate the cumulative revenue impact of floodplain harvesting charges is $0.35 million in 2017-18, rising to $0.37 million in 2019-20. That is, annual revenue from FPH licence holders is expected to be around $0.36 million, based on forecast water taken, when floodplain harvesting is fully introduced. Most of the impact is attributed to the regulated Gwydir water source (35% of all revenue from 2017-18 onwards), as shown in Table 13.6.

Table 13.6 Cumulative impact of floodplain harvesting charges (2017-18 and 2019-20) ($nominal) – including inflation

	Floodplain harvesting charge ($/ML)		Forecast water take per year (ML)	Annual revenue ($)	
	2017-18	2019-20		2017-18	2019-20
Regulated					
Border	1.36	1.43	41,000	55,774	58,597
Gwydir	1.04	1.10	118,000	123,137	129,371
Namoi	1.40	1.47	48,000	67,273	70,679
Macquarie	1.63	1.72	29,000	47,339	49,736
Unregulated					
Far West	1.98	2.08	30,000	59,384	62,390
Total			**266,000**	**352,907**	**370,773**

Source: We have assumed that floodplain harvesting would be fully implemented in 2017-18. IPART Calculations.

Our analysis indicates that the average bill for a floodplain harvesting licence in 2019-20 is around $824 across all relevant water sources. This estimate is based on DPI Water's preliminary estimate of 450 floodplain harvesting licences.[190] The actual impact would vary depending on actual water take for each floodplain harvesting licence.

[190] DPI Water submission to IPART, September 2015, p 157.

13.2 Consideration of licences paying WaterNSW charges

Draft decision

40 We have considered the impact of our draft prices on regulated rivers licences that also pay WaterNSW charges for bulk water services and consider the impact reasonable.

Reasons for decision

In addition to DPI Water's charges for water management services, licence holders in regulated water sources pay charges for bulk water infrastructure charges to WaterNSW. These charges were determined by the Australian Competition and Consumer Commission (ACCC) (for Inland valleys) and IPART (for Coastal valleys). As shown in Table 13.7, our draft prices for DPI Water's services are significantly less than the current ACCC/IPART determined charges for WaterNSW.[191] The bulk water infrastructure charges for a general security licence are around 2.3 times, and usage charges are around 8.7 times higher than our draft water take prices.

Table 13.7 Comparison of WaterNSW infrastructure charges by ACCC and DPI Water charges by IPART ($2015-16)

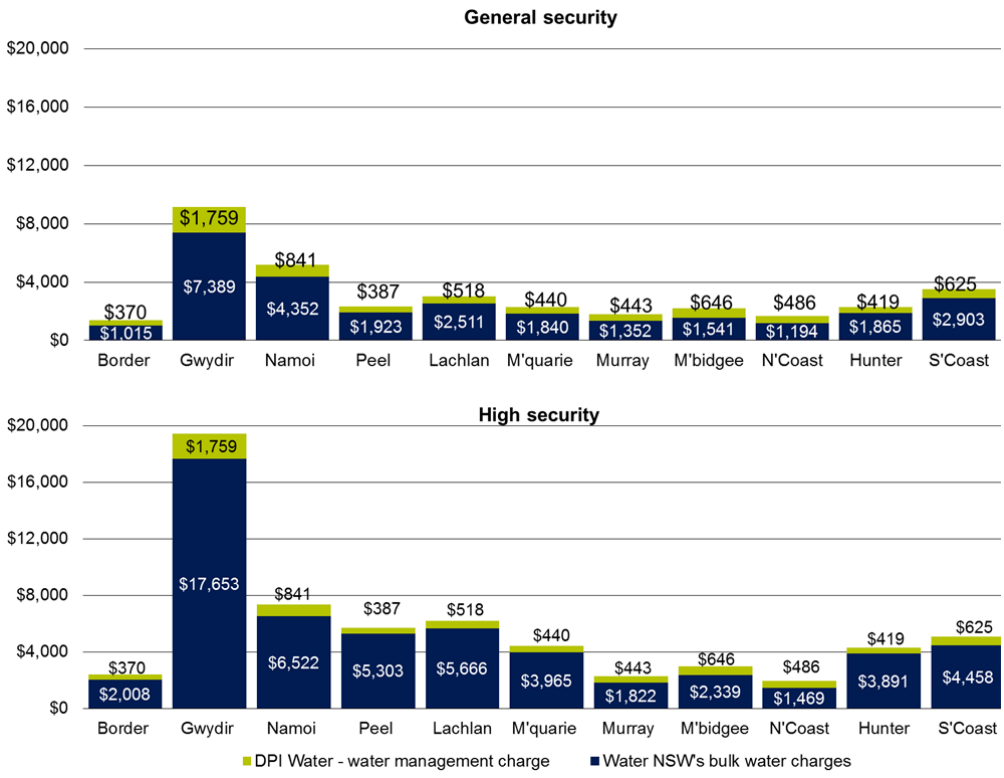
	Entitlement charge ($/ML)			Usage/water take charge ($/ML)	
	ACCC/IPART		IPART draft prices for DPI Water	ACCC/IPART	IPART draft prices for DPI Water
	High security	General security			
Border	11.20	3.90	2.14	10.18	1.67
Gwydir	14.00	3.44	1.39	11.89	1.20
Namoi	16.81	7.99	2.57	19.80	1.73
Peel	31.65	3.48	2.26	52.27	4.01
Lachlan	14.84	3.24	1.35	19.33	1.80
Macquarie	14.35	3.51	1.60	15.89	1.73
Murray	4.79	2.66	1.45	6.40	1.03
Murrumbidgee	3.63	1.53	1.22	4.28	0.81
North Coast	9.54	7.25	3.71	45.04	5.73
Hunter	26.03	8.86	2.69	14.77	1.84
South Coast	21.12	10.09	3.14	40.38	4.98

Source: ACCC, *WaterNSW Annual review of regulated charges: 2015-16 – Final Decision*, June 2015, p 24; WaterNSW, *Regulated Charges*, 2016 http://www.waternsw.com.au/customer-service/pricing/regulated-charges.

[191] For comparative purposes, we have presented our figures in 2015-16 dollars, rather than in nominal dollars, for a 'like-with-like' comparison with the ACCC determined charges.

Figure 13.1 provides an indicative comparison of WaterNSW's infrastructure charges for 2015-16, and our draft prices for DPI Water's water management charges for 2016-17, on the typical bill for regulated water sources.[192] Our analysis shows that our draft prices contribute to a smaller proportion of the total bill compared with WaterNSW's infrastructure charge - around 16% to 41% of the total bill for general security licences and 7% to 33% of the total bill for high security licences.[193] We note that our draft prices would decrease the typical bill (in $2015-16) for seven of the eleven regulated sources, which may further reduce the share of DPI Water's water management charges.

Figure 13.1 Indicative comparison of a 'typical bill' for 2016-17 - WaterNSW infrastructure charges and DPI Water's water management charges ($2015-16)



Note: To estimate the 'typical bills', we have used the median entitlements and average water activation for each water source.

Data source: IPART calculations based on ACCC, *WaterNSW Annual review of regulated charges: 2015-16 – Final Decision*, June 2015, p 24; WaterNSW, *Regulated Charges*, 2016 http://www.waternsw.com.au/customer-service/pricing/regulated-charges.

[192] The ACCC determined WaterNSW's infrastructure charges for 2014-15 to 2016-17, in 2014. We note that the ACCC has updated charges for 2015-16, but not for 2016-17. For comparative purposes, we have used the updated 2015-16 charges ($2015-16).

[193] This is based on the ACCC's updated charges for WaterNSW's for 2015-16. We note that this is indicative comparison of the hypothetical bill for 2016-17, and that the ACCC may revise the charges for 2016-17.

13.3 Consideration of impact on farm businesses

Draft decision

41 We have assessed the impact of our draft prices on the cost of operating farm businesses and considered them reasonable.

Reasons for decision

DPI Water assessed the impact of its proposed prices on five different types of farm businesses.[194] It found its proposed charges account for:

- up to 9% of farm business's total variable costs for regulated sources
- up to 9% of farm business's total variable costs for unregulated sources, and
- up to 7% of farm business's total variable costs for groundwater sources.[195]

DPI Water also stated that, for regulated rivers, the proposed price increases would increase total variable costs by a maximum of 0.5% by the end of the 2016 determination period.[196]

Overall, we consider that our draft prices will not have an adverse impact on farm businesses. Under our draft prices, the typical bill is forecast to decrease for 17 of the 26 water sources, which will also reduce the total variable cost of farm businesses (see Table 13.1to Table 13.3). For the remaining nine water sources, four would increase less than the rate of inflation,[197] and five would increase by around 1% to 6% more than under DPI Water proposed prices.[198] The increase for these five water sources is a result of our decision to transition at faster rate towards full cost recovery for these water sources.

13.4 Consideration of potential returns to water licences

Draft decision

42 We have considered the impact of our draft prices within the context of the water market and note that the DPI Water costs are relatively minor in comparison to potential returns.

194 The five types are – lucerne, cotton, rice, maize and cherry.
195 DPI Water submission to IPART, September 2015, p 225.
196 DPI Water submission to IPART, September 2015, p 225.
197 This includes the Border, Namoi and Murray regulated water sources, and the Far West unregulated water source.
198 This includes the Gwydir, Peel, Murrumbidgee and Hunter regulated water sources, and the Murrumbidgee groundwater source.

Reasons for decision

A further consideration when assessing the impact of our draft prices is the available returns to holders of water licences or, in other words, the value of the water licences.

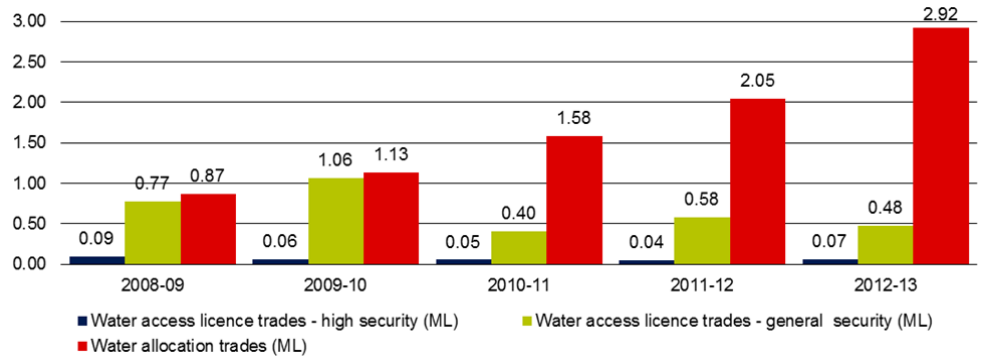
A large number of entitlement holders can trade their water entitlements or allocations. The water trading market in NSW is increasing in depth, ie, the number and volume of dealings for water allocation assignments has increased significantly between 2008-09 and 2012-13, from 0.9 to 2.9 million ML (see Figure 13.2).

We note that the ability to trade water depends on physical and hydrological constraints in each water source. The opportunity for trade may be substantially constrained in some unregulated and groundwater water sources, as defined in relevant water sharing plans.

The traded price of water licences and water allocation is dependent on a number of factors, including water availability and expected returns from crops. In nominal terms, the price of water allocation varies greatly from year to year (see Figure 13.3).

Nevertheless, the prices water users pay to DPI Water for managing the system of water entitlements (property rights) are relatively low compared to the value of these entitlements and allocations – as determined through the water trading market. For example, assuming the market price for water allocations is between $35 per ML,[199] our draft prices will result in an effective water management cost of around $2.80 per ML of water take for 2016-17. This represents around 8% of the market price of water in the Murrumbidgee regulated river valley.

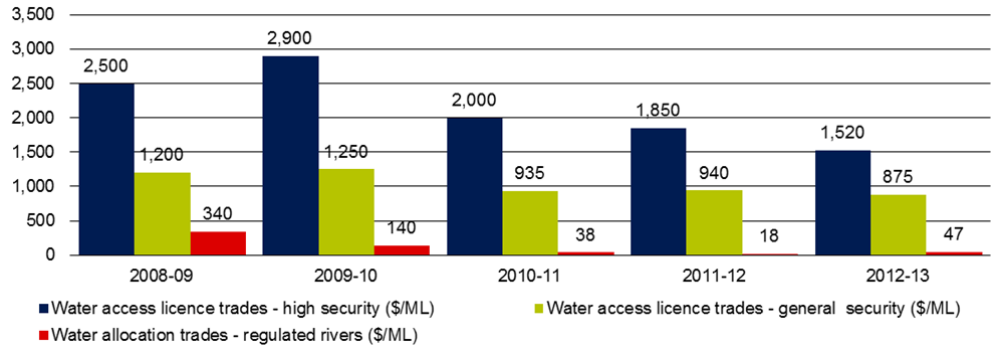
Figure 13.2 NSW water access licence and water allocation trades (2008-09 to 2012-13) (millions of ML)



Source: National Water Commission, *Australian Water Market Reports 2012-13*, pp 179 and 186.

[199] This example is based on the price of water allocations between 2010-11 and 2012-13, which ranged from $18 to $47 per ML, as shown in Figure 13.3.

Figure 13.3 Price for water access licence entitlements and water allocations in NSW (2008-09 to 2012-13) ($nominal/ML)



Source: National Water Commission, *Australian Water Market Reports 2012-13*, pp 182-190.

13.5 Consideration of the level of cost recovery by DPI Water

Draft decision

43 We have considered the impact of our draft prices on the level of cost recovery by DPI Water for all water sources.

Reasons for decision

In setting our draft prices, we have taken into account the level of cost recovery by DPI Water for all water sources. Target revenue as a percentage of the user share of the notional revenue requirement (NRR) is called 'the level of full cost recovery'. The shortfall is funded by the Government effectively as a community service obligation (CSO).

Table 13.8 summarises the impact of our draft pricing decisions on the level of cost recovery. This shows that, for those water sources not at full cost recovery, our draft prices will transition towards full cost recovery at a faster rate than DPI Water's proposal. However, under our draft decisions, DPI Water's level of cost recovery is still below 100% for several water sources. We have done this to achieve a balance between setting prices that recover DPI Water's efficient costs and mitigating price impacts on users.

Table 13.8 Impact of IPART's draft prices on cost recovery levels

Water sources	IPART draft decision		DPI Water proposal	
	2016-17	2019-20	2016-17	2019-20
Regulated rivers				
Border	100.0%	100.0%	95.5%	100.0%
Gwydir	83.5%	90.9%	75.5%	81.0%
Namoi	100.0%	100.0%	96.0%	100.0%
Peel	70.1%	77.8%	63.1%	67.7%
Lachlan	100.0%	100.0%	100.0%	100.0%
Macquarie	100.0%	100.0%	100.0%	100.0%
Murray	100.0%	100.0%	91.5%	98.2%
Murrumbidgee	90.8%	98.1%	82.3%	85.1%
North Coast	100.0%	100.0%	100.0%	100.0%
Hunter	87.6%	94.6%	80.0%	85.1%
South Coast	100.0%	100.0%	100.0%	100.0%
Unregulated rivers				
North West	100.0%	100.0%	100.0%	100.0%
Central West	100.0%	100.0%	100.0%	100.0%
Far West	100.0%	100.0%	100.0%	100.0%
Murray	100.0%	100.0%	100.0%	100.0%
Murrumbidgee	100.0%	100.0%	100.0%	100.0%
North Coast	100.0%	100.0%	100.0%	100.0%
Hunter	100.0%	100.0%	100.0%	100.0%
South Coast	100.0%	100.0%	88.3%	94.3%
Groundwater				
Inland	90.1%	92.1%	91.9%	92.6%
Coastal	100.0%	100.0%	100.0%	100.0%

Source: IPART Calculations.

14 Draft output measures

In the 2011 Determination, we established a reporting framework for the then NSW Office of Water (NOW) to ensure that both IPART and stakeholders had adequate information on expenditures and activities over the 2011 determination period, and to enhance future reviews of pricing proposals.

The reporting framework set at the 2011 Determination comprised annual reporting measures, an end of determination period report, and an Annual Information Return (AIR) spreadsheet.[200] DPI Water has complied with the reporting framework over the 2011 determination period.

DPI Water has proposed to continue reporting against a set of output measures relating to each of its activities over the 2016 determination period.

This chapter outlines our draft decisions on DPI Water's output measures and reporting framework for the 2016 determination period.

14.1 Summary of draft decisions on DPI Water's output measures

Draft decision

44 IPART's draft decision is for DPI Water to report annually against the output measures and in accord with the framework listed in Appendix F. This report will be published on IPART's website.

The output measures in Appendix F are DPI Water's proposed output measures for the 2016 determination period,[201] plus three additional measures. The additional output measures are:

- progress in implementing floodplain harvesting licensing
- number of customers switching from a 1-part to a 2-part tariff, and
- progress in implementing the water take measurement strategy.

200 See Chapter 13, IPART, *Review of prices for the Water Administration Ministerial Corporation - Final Report*, February 2011.
201 DPI Water submission to IPART, September 2015, Appendix C.

In reporting on its output measures, DPI Water should also:

- explain how output measures relate to proposed outcomes, which are specified in the output measures table in Appendix F, and its progress in achieving these outcomes, and
- provide its annual report on its output measures to IPART in a form that can be made publically available on IPART's website.

Further, DPI Water should report annually to IPART (in a template to be approved by IPART) on its external funding, by activity. DPI Water's performance against the output measures will be taken into account at the next price review.

Reasons for our decision

Output measures and a reporting framework are important for providing transparency to stakeholders and ensuring that DPI Water is held accountable for delivering the activities and services funded by water users through prices.

We consider that the reporting framework implemented in the 2011 Determination[202] has resulted in improvements in DPI Water's performance and greater transparency for stakeholders. For example, DPI Water:

- Undertook investigation into policies related to levying charges on basic rights holders, and concluded that basic rights holders should not be subject to water management charges.[203]
- Is developing a new water take measurement strategy in consultation with stakeholders.[204]
- has demonstrated improved customer consultation in the development of its pricing proposals.

DPI Water's performance over the 2016 determination period against the output measures can inform IPART's assessment of its proposed expenditure and prices at the next price review.

For this price review, DPI Water's submission included proposed output measures and performance indicators for its water management activities over the 2016 determination period.[205] DPI Water's proposed output measures and performance indicators align with its new W-code activities. For each relevant W-code activity, DPI Water's proposed performance measure framework lists:

- code and name of the activity

[202] IPART, *Review of prices for the Water Administration Ministerial Corporation - Final Report,* February 2011, chapter 13.
[203] DPI Water submission to IPART, September 2015, p 79.
[204] DPI Water submission to IPART, September 2015, p 76.
[205] DPI Water submission to IPART, September 2015, Appendix C.

- description of the activity
- outputs
- output measures/performance indicators (where timeframes for achievement of measures or forecasts have not been listed, the forecasts relate to the last year of the 2016 Determination, 2019-20), and
- outcomes.

The full list of output measures can be found in Appendix F of our report.

Our expenditure review consultant, Synergies, assessed the appropriateness of DPI Water's proposed output measures and associated key performance indicators (KPIs). Synergies commented that:

> In most instances, the output measures and KPIs proposed by DPI Water are clear in communicating what is to be achieved. Numerous KPIs are defined in terms of cumulative percentage achievement of specified targets. This is appropriate for measuring performance at annual intervals during a regulatory period.[206]

Based on our consultants' assessment and our own review, our draft decision is to accept DPI Water's proposed output measures for the 2016 determination period. However, we have also added several additional output and reporting measures to the reporting framework. These are briefly discussed below.

14.1.1 Floodplain harvesting

DPI Water's proposal included output measures that relate to floodplain management plan development (W06-03). DPI Water has set the number of Floodplain Management Plans completed or remade as an output measure, and has stated that five new floodplain management plans will be developed over the 2016 determination period.[207]

In its submission, DPI Water proposed a 2-tier tariff structure for the 2016 Determination, with one set of tariffs that excludes and one that includes floodplain harvesting licences.[208] DPI Water proposed that the change from the floodplain harvesting exclusive tariffs to the inclusive tariffs would apply from 1 July following Ministerial approval to issue all floodplain harvesting licences for that water source.

To allow stakeholders to track annual progress towards the implementation of any floodplain harvesting licences in each water source, we have included provision for DPI Water to report on the progress of floodplain harvesting licensing when reporting against the floodplain management plan development

[206] Synergies Final Report, January 2016, p 133.
[207] DPI Water submission to IPART, September 2015, p 282.
[208] DPI Water submission to IPART, September 2015, p 9.

activity code (W06-03). This should include a target implementation date for each relevant water source.

14.1.2 Tariff choice and implementation of water take measurement strategy

DPI Water stated in its submission that it expects to finalise the water take measurement strategy before the start of the 2016 determination period.[209]

In its annual report on output measures, we consider that DPI Water should report on:

- the number of licence holders switching from a 1-part tariff to a 2-part tariff over that year (and the number of licence holders in total subject to each tariff type), by water source, and
- progress in implementing its water take measurement strategy.

This is in response to stakeholder concern about the lack of availability (or information on availability) of 2-part tariffs in some regions. For instance, a stakeholder at the Tamworth public hearing noted:

> [DPI Water has] failed to pass on the ability to have a two-part tariff.[210]

These additional output measures will allow us to assess the extent to which water users are able to switch from a 1-part to a 2-part tariff over the 2016 determination period. DPI Water stated in its submission that in the new water take measurement strategy, it is considering an approach that applies lower accuracy, lower cost equipment to sites with smaller take capacity.[211] This should allow smaller water users currently on a 1-part tariff to access 2-part tariffs, which should lead to a reduction in their bills.[212]

14.1.3 Reporting of external funding – additional output measure

Our expenditure consultant, Synergies, was concerned about the absence of transparent reporting of external funding received by DPI Water for some of its water resource management activities. Synergies considered that:

> …the standard of reporting does not provide adequate transparency or assurance that external funds are not being used to pay for activities whose costs are also included in expenditure forecasts for cost recovery through water management charges.[213]

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209 DPI Water submission to IPART, September 2015, p 76.

210 See IPART, *Review of Prices for DPI Water, Transcript for Public Hearing*, Tamworth, 16 November 2015, pp 21-22.

211 DPI Water submission to IPART, September 2015, p 76.

212 For example, based on 2016-17 prices, an entitlement of 100 ML, and an activation rate of 40%, an irrigator in the Peel unregulated water source would face a bill of $447 on a 1-part tariff compared with $308 on a 2-part tariff.

213 Synergies Final Report, January 2016, p 130.

Synergies developed a reporting template to provide the necessary transparency around external funding, by activity.[214] Synergies recommended that DPI Water complete this template on an annual basis over the 2016 determination period.

We therefore consider that DPI Water should report annually on external funding by activity, over the 2016 determination period. This report should be submitted to IPART in a template similar to that recommended by Synergies (and to be approved by IPART).

14.1.4 Linking all output measures to outcomes

We note that many of the output measures are input focussed, or measure the number of activities undertaken in a year. We consider that the link between output measures/performance indicators and the outcomes outlined by DPI Water in its proposed framework requires strengthening. For this reason, we consider that DPI's annual report to IPART should explain how the output measures relate to the 'outcomes' specified in the output measures table in Appendix F, and its progress in achieving these outcomes.

[214] Synergies Final Report, January 2016, pp 130-131.

Appendices

A Matters to be considered

In making determinations, IPART is required under section 15 of 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 A.1 outlines the sections of the report that address each matter.

Table A.1 Consideration of section 15 matters by IPART

section 15(1)	Report reference
a) the cost of providing the services	Chapters 5-7
b) the protection of consumers from abuses of monopoly power	Chapters 2, 3, 8, 10 and 13
c) the appropriate rate of return and dividends	Chapter 6 and Appendix C DPI Water is not required to pay dividends
d) the effect on general price inflation	Chapter 10
e) the need for greater efficiency in the supply of services	Chapters 4 and 5
f) ecologically sustainable development	Chapter 3
g) the impact on borrowing, capital and dividend requirements	Not applicable
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	Chapters 2 and 3
i) need to promote competition	Chapters 2 and 3
j) considerations of demand management and least cost planning	Chapters 4, 8 and 9
k) the social impact	Chapter 13
l) standards of quality, reliability and safety	Chapter 14 and Appendix F

B Monopoly services, user shares and cost allocation (cost drivers)

Table B.1 DPI Water's monopoly service activities (in W-codes) for the 2016 Determination mapped to C-code activities in the 2011 Determination

Code	Activity	User share	Mapped C-code activity (user share percentage)
W01	**Surface water monitoring**		
W01-01	Surface water quantity monitoring	70%	▾ C01-01 Surface water quantity monitoring (70%) ▾ C01-06 Surface water monitoring assets management (70%)
W01-02	Surface water data management and reporting	50%	▾ C01-02 Surface water quantity data management and reporting (50%) ▾ C01-05 Surface water quality and biological database management (50%)
W01-03	Surface water quality monitoring	50%	▾ C01-03 Surface water quality monitoring (50%) ▾ Part C04-01 Water quality analysis (50%)
W01-04	Surface water algal monitoring	50%	▾ C01-04 Surface water ecology, biology and algal monitoring (50%) ▾ Part C04-01 Water quality analysis (50%)
W01-05	Surface water ecological condition monitoring	50%	▾ Part C01-04 Surface water ecology, biology and algal monitoring (50%) ▾ Part C06-03 Plan performance monitoring and reporting (50%)

Code	Activity	User share	Mapped C-code activity (user share percentage)
W02	**Groundwater monitoring**		
W02-01	Groundwater quantity monitoring	100%	▾ C02-01 Groundwater quantity monitoring (100%) ▾ C02-04 Groundwater monitoring assets management (100%)
W02-02	Groundwater quality monitoring	100%	▾ C02-02 Groundwater quality monitoring (100%) ▾ Part C04-01 Water quality analysis (50%)
W02-03	Groundwater data management and reporting	100%	▾ C02-03 Groundwater database management (100%)
W03	**Water take monitoring**		
W03-01	Water take data collection	100%	▾ C03-01 Metering operations – user owned (100%), ▾ C03-03 Metering operations – government owned (100%)
W03-02	Water take data management and reporting	100%	▾ C03-02 Metering data management (100%)
W04	**Water modelling and impact assessment**		
W04-01	Surface water modelling	50%	▾ C05-01 Water sharing/water management modelling (50%) ▾ C05-02 Resource assessments (30%) ▾ Part C05-03 Water balances and accounting (100%)
W04-02	Groundwater modelling	100%	▾ C05-04 Groundwater modelling (100%)
W04-03	Water resource accounting	100%	▾ Part C05-03 Water balances and accounting (100%)
W05	**Water management implementation**		
W05-01	Systems operation and water availability management	100%	▾ C06-01 Systems operation and water availability management (100%) ▾ C06-02 Trading and accounts management (100%)
W05-02	Blue-green algae management	50%	▾ C06-04 Blue-green algae management (50%)
W05-03	Environmental water management	0%	▾ C06-05 Environmental water management (0%) ▾ Part C07-03 Environmental water planning (0%)

Code	Activity	User share	Mapped C-code activity (user share percentage)
W05-04	Water plan performance assessment and evaluation	50%	▾ C06-03 Plan performance monitoring and reporting (50%)
W06	**Water management planning**		
W06-01	Water plan development (coastal)	70%	▾ Part C07-01 Water sharing plan development (70%) ▾ Part C07-05 Water industry regulation (30%)
W06-02	Water plan development (inland)	70%	▾ Part C07-01 Water sharing plan development (70%) ▾ Part C07-05 Water industry regulation (30%)
W06-03	Floodplain management plan development	0%	▾ Part C07-01 Water sharing plan development (70%)
W06-04	Drainage management plan development	0%	▾ Part C07-01 Water sharing plan development (70%)
W06-05	Regional planning and management strategies	70%	▾ Part C07-01 Water sharing plan development (70%)
W06-06	Development of water planning and regulatory framework	75%	▾ C07-02 Operational planning (75%) ▾ Part C07-05 Water industry regulation (30%)
W06-07	Cross border and national commitments	50%	▾ C07-04 Cross-border and national commitments (50%)
W07	**Water management works**		
W07-01	Water management works	50%	▾ C08-01 River management works (50%)
W08	**Water regulation management**		
W08-01	Regulation systems management	100%	▾ Part C09-01 Licence administration (100%)
W08-02	Consents management and licence conversion	100%	▾ C09-02 Licence conversion and entitlement specification (100%)
W08-03	Compliance management	100%	▾ C09-03 Compliance (100%)
W08-99	Water consents overhead	100%	▾ C09-04 Consent transaction overhead (100%)
W09	**Water consent transactions**		
W9-01	Water consent transactions	100%	▾ C10-01 Water consent transactions (100%)
W10	**Business and customer services**		
W10-01	Customer management	100%	▾ Part C09-01 Licence administration (100%)
W10-02	Business governance and support	70%	▾ C11-02 Business development (70%)
W10-03	Billing management	100%	▾ C11-01 Financial administration (100%)

Source: DPI Water submission to IPART, September 2015, pp 115-117.

Table B.2 Monopoly services by activity group, cost code, cost drivers and user share

Activity group	Code	Description	Cost driver	User share (%)
Surface water monitoring	W01-01	Surface water quantity monitoring	S58 R/U Relative cost of hydrometric stations	70
	W01-02	Surface water data management and reporting	S05W R/U Numbers surface water sites subject to data management	50
	W01-03	Surface water quality monitoring	S27 R/U Number of quality tests processed	50
	W01-04	Surface water algal monitoring	S28 R/U Number of algal tests	50
	W01-05	Surface water ecological condition monitoring	S35 R/U River length	50
Groundwater monitoring	W02-01	Groundwater quantity monitoring	S10W G Number of groundwater bore pipes monitored	100
	W02-02	Groundwater quality monitoring	S29 G Number of quality tests	100
	W02-03	Groundwater data management and reporting	S10W G Number of groundwater bore pipes monitored	100
Water take monitoring	W03-01	Water take data collection	N/A	100
	W03-02	Water take data management and reporting	S56 U/G Unregulated/ groundwater two-part water take	100
Water modelling and impact assessment	W04-01	Surface water modelling	S61 R/U Surface water modelling	50
	W04-02	Groundwater modelling	S44 G Groundwater models	100
	W04-03	Water resource accounting	S37 R/U/G Total water take	100
Water management implementation	W05-01	Systems operation and water availability management	S17W R/U/G Water operations complexity	100
	W05-02	Blue-green algae management	S41 R/U Risk rated BGA alerts	50
	W05-03	Environmental water management	S42 R/U Environmental entitlement	0
	W05-04	Water plan performance	S37 R/U/G	50

Activity group	Code	Description	Cost driver	User share (%)
		assessment and evaluation	Total water take	
Water management planning	W06-01	Water plan development (coastal)	S54 R/U/G Planning coastal	70
	W06-02	Water plan development (inland)	S55 R/U/G Planning inland	70
	W06-03	Floodplain management plan development	S33 R/U Floodplain management plans	0
	W06-04	Drainage management plan development	S34 R/U Drainage plans	0
	W06-05	Regional planning/ management strategies	S38 R/U/G Regional planning	70
	W06-06	Development of water planning and regulatory framework	S37 R/U/G Total water take	75
	W06-07	Cross border and national commitments	S57 R/U/G Water planning for national commitments	50
Water management works	W07-01	River management works	S91W R/U/G Water management works project dollar cost	50
Water regulation management	W08-01	Regulation systems management	S02W R/U/G Number of water access licences	100
	W08-02	Consents management and licence conversion	S02W R/U/G Number of water access licences	100
	W08-03	Compliance management	S59 R/U/G Compliance risk profile numbers of licences	100
	W08-99	Water consents overheads	S88W R/U/G Consent transactions	100
W09 Water consents transactions	W09-01	Water consents transactions	S88W R/U/G Consent transactions	100
Business and customer services	W10-01	Customer management	S50 R/U/G Number of customers	100
	W10-02	Business governance and support	S37 R/U/G Total water take	70
	W10-03	Billing management	S14W R/U/G Number of bills issued per year	100

Note: R = Regulated, U = Unregulated and G = Groundwater.
Source: Synergies Final Report, p 41; DPI Water submission to IPART, September 2015, Appendix E.

Table B.3 Cost drivers, ranked by proportion of expenditure allocated through each driver, comparison of 2011 Determination to Draft 2016 Determination

Existing Driver	Description	% of costs (2011-12 to 2015-16)	Existing Driver	Description	% of costs (2016-17 to 2020-21)
S18	Water planning, number of plans and complexity	17.2	S37	Total Water take	13.0
S02	Number of water licences	13.4	S58	Relative cost of DPI Water funded hydrometric stations	9.5
S04	DWE funded water gauging stations	12.6	S59	Compliance risk profile number of licences	7.9
S10	Active monitoring bores	8.7	S10	Relative cost of pipes monitored	7.1
S20	Extraction related entitlement	7.0	S17	Water Operations (FTEs and complexity)	6.9
S03	Entitlement then numbers of access licences	6.3	S55	Planning inland (Water take)	6.3
S88	Consent transactions	5.4	S61	Surface water modelling (models)	5.8
S08	Water modelling and impact assessment	5.1	S88	Consent transactions	5.1
S01	Billed entitlement	4.3	S02	Number of water licences	4.6
S14	Bills issued per year	3.6	S27	Water quality tests	4.5
S17	Water operations (FTEs and complexity)	3.6	S38	Regional planning/management strategies	4.2
S13	Meter readings	3.1	S18	Water planning, number of plans and complexity	3.7
S07	DWE funded water quality sampling events	2.6	S50	Number of customers	3.3
S22	Extraction related entitlement	2.0	S05	All water sites with data collected for data management	2.8
S12	Water quality tests	1.8	S14	Bills issued per year	2.7
S91	Water management works ($)	1.5	S31	Numbers of work approvals with meters	2.3
S16	Blue-green algae samples	0.8	S42	Environmental entitlements	1.8
S06	Ecology, biology and algal sampling events	0.8	S91	Water management works ($)	1.7

Existing Driver	Description	% of costs (2011-12 to 2015-16)	Existing Driver	Description	% of costs (2016-17 to 2020-21)
S23	Entitlement	0.2	S57	National commitments weighted water take	1.7
			S44	Groundwater models	1.4
			S28	Water algal tests	1.3
			S41	Risk-rated blue-green algae alerts	0.9
			S35	River length	0.5
			S56	Two part water take	0.5
			S29	Number of quality tests	0.4
			S34	Drainage plans	0.1

Source: Synergies, *DPI Water Expenditure Review,* 13 January 2016, p 60.

C Weighted average cost of capital

This appendix provides an overview of our draft decision on the Weighted Average Cost of Capital (WACC) to apply to DPI Water.

IPART's draft decision is to apply a post-tax real WACC of 4.8% to calculate the return on DPI Water's assets.

Reasons for our decision

We have developed our approach to setting the WACC in consultation with stakeholders in a number of reviews over the last few years.[215] The parameters that underpin our draft decision are shown in Table C.1.

Table C.1 Rate of return range and parameters (sampled to 20 Jan 2016)

	WACC: current data			WACC: long-term			WACC range		
	Low	**Mid**	**High**	**Low**	**Mid**	**High**	**Low**	**Mid**	**High**
Nominal risk free rate		2.8%			4.6%				
Inflation		2.5%			2.5%				
Debt margin		2.8%			2.9%				
Gearing		60%			60%				
Market risk premium	7.0%	8.5%	10.0%	5.5%	6.0%	6.5%			
Equity beta	0.6	0.7	0.8	0.6	0.7	0.8			
Cost of debt (nominal pre-tax)		5.6%			7.5%				
Nominal Vanilla WACC	6.2%	6.9%	7.7%	7.7%	8.0%	8.4%	6.9%	7.4%	8.0%
Post-tax real WACC	3.6%	4.3%	5.1%	5.0%	5.4%	5.8%	4.3%	**4.8%**	5.4%

Source: Bloomberg, RBA, IPART calculations.

[215] We completed a major review of the WACC in 2013 [IPART, *Review of WACC Methodology – Final Report*, December 2013]. More recently, we developed the method of estimating the debt margin and the inflation adjustment [IPART, *IPART's New Approach to Estimating the Cost of Debt – Final Report*, April 2014; IPART, *New approach to forecasting the WACC inflation adjustment – Fact Sheet*, March 2015].

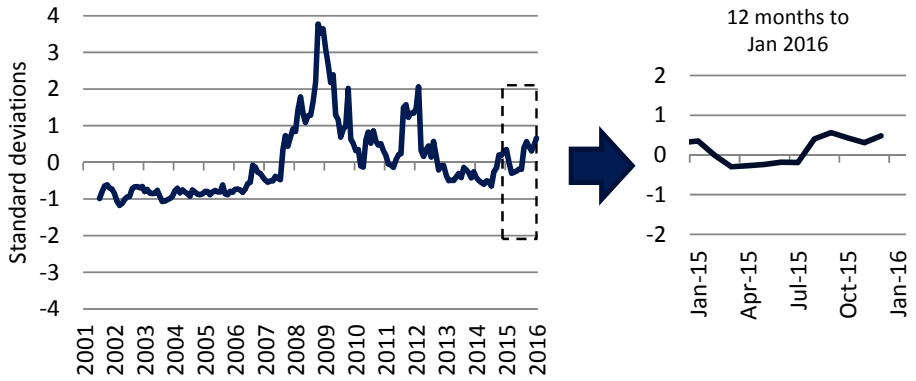
DPI Water has submitted a WACC of 4.6%.[216] DPI Water proposed that it should receive the same WACC as the other water agencies for which prices are concurrently being reviewed (Sydney Water, WaterNSW and Hunter Water). It submits that "DPI Water operates in the same industry and should therefore be subject to similar financing parameters."[217] We have applied the same WACC estimate across the four water agencies. This is consistent with our objective of setting a WACC that reflects the efficient cost of capital for a *benchmark* utility that operates in a competitive market and faces similar risks to the regulated business. We do not aim to set a WACC that reflects the regulated firm's *actual* cost of capital.

Our draft decision WACC estimate of 4.8% has been set using our standard approach for all aspects of the WACC. We have also retained our industry-specific parameters for water. These parameters are the equity beta, the gearing ratio of 60% and the credit rating assumption that underpins the debt margin. We sampled the market-based parameters of the WACC (ie, the risk free rate, debt margin and inflation) to 20 January 2016. We will update these market-based parameters and the resulting WACC before we make our final decision.

As shown in Table C.1, we derive a range of WACC values from current market data and long-term averages of data. In accordance with our 2013 WACC methodology decision rule for selecting the WACC point estimate,[218] we have selected the midpoint WACC value within our range because the current uncertainty index threshold has not been exceeded (see Figure C.1).[219] This has the effect of weighting the long-term and current WACC parameters to 50:50. We have consistently applied this decision rule in all of our WACC decisions since establishing the methodology.

[216] DPI Water submission to IPART, September 2015, p 192.
[217] DPI Water submission to IPART, September 2015, p 192.
[218] IPART, *Review of WACC Methodology - Final Report,* December 2013.
[219] The uncertainty index threshold is 1 standard deviation from the mean.

Figure C.1 IPART's uncertainty index



Source: IPART, *WACC Biannual Update*, February 2016, p 7.

D Price structures

Table D.1 Median entitlement and average water take by water source, for 'typical licence' and customer impact analysis

Water Source	Regulated rivers		Unregulated rivers		Groundwater	
	Median entitlement, ML	Water share activation rate, % entitlement	Median entitlement, ML	Water share activation rate, % entitlement	Median entitlement, ML	Water share activation rate, % entitlement
01. Border	136	35%	96.5	40%		
02. Gwydir	972	35%	108.5	40%		
03. Namoi	246	49%	135	40%		
04. Peel	120	24%	65	40%		
05. Lachlan	272	31%	75	38%		
06. Macquarie	196	37%	75	40%		
07.Far West			142	70%		
08. Murray	221	54%	107	27%		
09. Murrumbidgee	380	59%	60	24%	188	52%
10. North Coast	120	6%	45	40%		
11. Hunter	118	47%	88	26%		
12. South Coast	141	26%	99	50%		
13. Inland[a]					188	52%
14.Coastal					93	23%

[a] Excluding Murrumbidgee.

Source: DPI Water submission to IPART, September 2015, Appendix L, Tables L.1 – L.3, pp 356-359.

E Consent transactions

Table E.1 Labour hours and operating costs for consent transaction charges ($2015-16)

Consent transaction	Administration ($69/hour)		Advertising and other ($69/hour + $300 for advertisement)		Rules Assessment ($69/hour)		Impact assessment $94/hour)		Determination and supervision ($113/hour)		Total	
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
New water access licences												
Zero share	2.9	**202.86**			1.1	**72.45**			0.48	**54.22**	4.47	**329.53**
Specific purpose	2.9	**202.86**			1.1	**72.45**			0.48	**54.22**	4.47	**329.53**
New controlled allocation	2.9	**202.86**			1.1	**72.45**			0.48	**54.22**	4.47	**329.53**
Water access licence dealings												
Regulated rivers	2.9	**202.86**			1.4	**94.18**			0.52	**58.50**	4.82	**355.54**
Unregulated rivers and groundwater	2.9	**202.86**			3.2	**217.35**	5.3	**493.42**	1.36	**154.10**	12.70	**1067.73**
Unregulated rivers and groundwater – low risk	2.9	**202.86**			3.2	**217.35**			0.73	**82.76**	6.82	**502.97**
Administrative	2.9	**202.86**							0.35	**39.95**	3.29	**242.81**
Water allocation assignments												
Unregulated rivers and groundwater	2.9	**202.86**			1.4	**94.18**			0.52	**58.50**	4.82	**355.54**
Approvals												
New or amended works and/or use approval	2.9	**202.86**	1.1	**372.45**	5.3	**362.25**	8.4	**789.47**	2.12	**239.72**	19.76	**1,966.74**
New or amended works and/or use approval (low risk)	2.9	**202.86**	1.1	**372.45**	5.3	**362.25**			1.11	**125.57**	10.35	**1,063.12**
New basic rights bore approval	3.2	**217.35**			1.4	**94.18**	0.3	**29.61**	0.58	**65.64**	5.41	**406.77**
Amended approval – administrative	2.9	**202.86**							0.35	**39.95**	3.29	**242.81**
Extension of approval – lodged before expiry date	2.9	**202.86**		**3.00(a)**					0.35	**39.95**	3.29	**245.81**

a The $3.00 figure was calculated by assuming interpreter service ($60 per transaction) would be required for 5% of all transactions.

Source: IPART calculations.

F Performance measures and outputs for future activities

As noted in Chapter 14, in addition to reporting annually on the output measures listed below, DPI Water should also report on the following measures:

- progress in implementing floodplain harvesting licensing (when reporting against the floodplain management plan development activity code (W06-03)
- number of licence holders switching from a 1-part to a 2-part tariff each year (and the number of licence holders in total subject to each tariff type), by water source, and
- progress in implementing the water take measurement strategy.

In reporting on its output measures, DPI Water should also:

- explain how output measures relate to proposed outcomes in the final column of the table below, and its progress in achieving these outcomes, and
- provide its annual report on its output measures to IPART in a form that can be made publically available on IPART's website.

Further, DPI Water should report annually to IPART (in a template to be approved by IPART) on its external funding, by activity.

Where timeframes for achievement of output measures or forecasts have not been listed, the forecasts relate to the last year of the 2016 Determination, 2019-20.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W01	**Surface water monitoring**		**The collection and provision of quantity, quality, algal and ecological information for monitoring, use, assessment and management of surface water.**		
W01-01	Surface water quantity monitoring	The provision of a surface water quantity monitoring system; including design, station calibration, data collection, processing, encoding, quality assurance and archiving from the networks of water monitoring stations; the delivery of near real time height and/or flow data from all telemetered sites to the corporate database; and the maintenance and operation of surface water monitoring stations.	• A maintained monitoring network of hydrometric stations providing the necessary data for surface water management. • Provision of validated water data from the network of surface water hydrometric stations.	**Output measure (OM1)** Number of stations for water management charge: • Current: o DPI Water = 430. o BRC = 29. • Forecast: o DPI Water = 430. o BRC = 29. **Performance indicator** No of visits per year per station: • Current: average 4.8. • Forecast: average 5.	Surface water quantity known.
W01-02	Surface water data management and reporting	The data management and reporting of surface water quantity, quality and biological information; including compilation, secure storage, management and publishing of data to customers, stakeholders and the general public.	Surface water quantity and quality information compiled, securely stored, managed and published to stakeholders and general public.	**Output measure (OM2)** Number of surface water sites subject to data management meeting specific criteria: • Current: 1,245. • Forecast: 1,245. **Performance indicator** Percentage telemetered sites with data available on internet 9am each day: • Current: 95%. • Forecast: 95%. Percentage of DPI Water funded sites telemetered • Current: 90%. • Forecast: 90%.	Surface water knowledge that supports the ability to share and manage water resources.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W01-03	Surface water quality monitoring	The provision of a surface water quality monitoring program; including design, sample collection, laboratory testing and analysis, test result quality assurance to accepted standards, and test result encoding to make it available for data management and reporting.	Provision of validated water quality test information.	**Output measure (OM3)** Number of tests per year: • Current: o DPI Water: 30,120 per year. o MDBA: 5,144 per year. o BRC: 4,800 per year. • Forecast: as above. **Performance indicator** Tests meeting quality standards (percentage acceptable tests/total tests): • Current: 90%. • Forecast: as above. Speed of reporting of results (percentage of tests taken, processed, quality assurance approved and coded for publication within 90 days): • Current: 90%. • Forecast: as above.	State-wide water quality behaviour known and described.
W01-04	Surface water algal monitoring	The provision of a surface water algal monitoring program; including design, sample collection, laboratory analysis, algal identification and enumeration to accepted standards, and result encoding for provision to regional coordinating committees.	Provision of algal data on the presence and extent of potentially toxic algal blooms.	**Output measure (OM4)** Number of sites monitored and tested for blue green algae: • Current: average 73 sites per month (DPI Water and MDBA). Increased frequency when conditions require. • Forecast: as above **Performance indicator** Percentage of samples collected and analysed according to current standards and within agreed timeframe: • Current: 95%. • Forecast: 95%.	Presence and status of algal blooms known.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W01-05	Surface water ecological condition monitoring	The provision of a surface water ecological condition monitoring system to assess the health of water sources; including design and application based on the River Condition Index for rivers, flood plains and wetlands.	Provision of the information for the six components of the River Condition Index: • Hydrology. • Geomorphology. • Riparian. • Biota. • Disturbance. • Water quality.	**Output measure (OM5)** River condition index updated: • Current: an updated report completed each year, outlining the attributes updated and the proportion of the state/water sources covered. • Forecast: As above. **Performance indicator** Percentage of the state for which the River Condition Index (RCI) is completed in current year: • Forecast: o 10% completed each year. o 100% of all RCI completed for the state by the end of 10 years.	River condition known.
W02	**Groundwater monitoring**		**The collection and provision of water level, pressure, flow and quality information for monitoring, use, assessment and management of groundwater**		
W02-01	Groundwater quantity monitoring	The provision of a groundwater level, pressure and flow monitoring system; including design, site calibration, data collection, entry, audit, quality assurance, archiving, and information provision; and the maintenance and operation of groundwater monitoring bores.	• A maintained network of monitoring bores providing the data necessary for groundwater management. • Provision of validated quantity and other physical resource data from groundwater monitoring bores.	**Output measure (OM6)** The number of pipes from which data are collected (in the last 2 years): • Current: 4,736. • Forecast: 4,800. **Performance indicator** Percentage of pipes monitored according to their scheduled frequency: • 90%.	Groundwater quantity status known for effective water management.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W02-02	Groundwater quality monitoring	The provision of a groundwater quality monitoring program; including design, sample collection, laboratory testing and analysis, test result quality assurance to accepted standards, and test result encoding to make it available for data management and reporting.	Provision of validated groundwater quality information.	**Output measure (OM7)** The number of pipes from which water quality data are collected (in the last 2 years): • Current: 495. • Forecast: 495. **Performance indicator** Percentage of pipes monitored according to their scheduled frequency: • Current: 90%. • Forecast: 90%.	Groundwater quality status known for effective water management.
W02-03	Groundwater data management and reporting	The data management and reporting of groundwater quantity and quality information; including compilation, secure storage, management and publishing of data to customers, stakeholders and the general public.	Groundwater quantity and quality information compiled, securely stored, managed and published to stakeholders and general public.	**Output measure (OM8)** Number of active pipes subject to data management: • Current: 4,736. • Forecast: 5,000. **Performance indicator** Percentage of active sites subject to data management: • Current: 98%. • Forecast: 98%.	Groundwater information that supports the ability to share and manage water resources and monitor performance against water management plans.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W03	**Water take monitoring**		**The provision of metering services, the collection of water take data and its recording on water allocation accounts for unregulated and groundwater licence holders**		
W03-01	Water take data collection	The electronic and manual collection, transmission and initial recording of water take data from licence holders for unregulated and groundwater sources; and the operation and maintenance of government owned meter and telemetry facilities.	• Government owned meters operated and maintained. • Volume of water take is collected.	**Output measures (OM9)** Number of government owned and maintained meters: • Current: 1,230 o Unregulated river: 605. o Groundwater: 625. • Forecast: 1,200 o Unregulated river: 600. o Groundwater: 600. Number of sites with agency water take reading/assessments charged: • Current: 3,002 o Unregulated river: 58. o Groundwater: 2,944. • Forecast: 3,300 o Unregulated river: 200. o Groundwater: 3,100. **Performance indicator** Percentage government owned meters operational: • Current: 89%. • Forecast 95%.	Water take known.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W03-02	Water take data management and reporting	The data management and reporting of water take for unregulated and groundwater sources including compilation, secure storage, management and publishing of data to authorised parties.	Water take measurement information quality assured, compiled, managed and made available to stakeholders.	**Output measure (OM10)** Issued entitlement metered: • Current: 3,486,000 o Unregulated river: 2,010,000 shares. o Groundwater: 1,476,000 shares. • Forecast: 3,495.000 o Unregulated river: 2,017,000 shares. o Groundwater: 1,478,000 shares. **Performance indicator** Percentage of issued entitlement metered: • Current: 70% o Unregulated river: 65%. o Groundwater: 78%. • Forecast: 70% o Unregulated river: 65%. o Groundwater: 78%.	Compliance of water take with licensed share component and water management plans.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W04	**Water modelling and impact assessment**		**The development and use of water system models for water sharing and water management applications, resource impact and water balance assessments, and annual general purpose water resource accounts for NSW water sources**		
W04-01	Surface water modelling	The development, upgrade and application of surface water resource management models, for use in water planning and to assess performance in terms of statutory requirements, interstate agreements, regional water supply optimisation and third party impacts on NSW stakeholders.	Surface water models developed for NSW River basins for: • Reporting on model conceptualisation and structure, processes, calibration, data sources for stakeholder information. • Long-term extraction limits. • Reliability and sequencing of water take. • Reliability and sequencing of water availability for entitlement types. • Time series and statistical analysis of river flows and floodplain/wetland watering. • On-farm water management. • Daily stream salinity. • Modelling to support water planning at a regional scale, including hydrologic/economic optimisation models for regional water strategies and metropolitan water planning.	**Output measure (OM11)** Number of models/analyses annually • Current: 22/2,000. • Forecast: 26/2,800. **Performance indicator** The percentage of surface water share component in NSW covered by models subject to annual assessments: • Current: 80% o Regulated river: 90%. o Unregulated: 35%. • Forecast: 95% o Regulated river: 100%. o Unregulated river: 50%.	Assessment of surface water impacts/plan optimisation, performance and diversion assessment from plan/scenario evaluations.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W04-02	Groundwater modelling	The development, upgrade and use of groundwater resource management models for water sharing and management applications, and for resource impact and balance assessments.	Regional groundwater models for groundwater sources covered by water management plans that are capable of providing: • Long-term sustainable extraction limits. • Details of aquifer interference. • Local water table details. • Water balance details. • Technical assessment of development proposals.	**Output measure (OM12)** Number of models/major aquifer analyses annually: • Current: 21/2,100. • Forecast: 22/2,200. **Performance indicator** Percentage of volume of groundwater share component subject to modelling assessment annually: • Current: 48%. • Forecast: 50%.	Assessment of groundwater impacts, plan performance and diversion assessment from plan/scenario evaluations.
W04-03	Water resource accounting	The development and update of water resource accounts and information on NSW water sources, for use by external stakeholders, and for internal water planning, management and evaluation processes.	• General purpose water accounting reports. • Reporting and analysis of water resource accounting obligations. • Miscellaneous analysis and reporting.	**Output measure (OM13)** Number of outputs for water accounting reports, reporting obligations and required ad hoc: • Current: o 10 valleys. o 9 analysis reports. o 14 miscellaneous studies. • Forecast: o 17 valleys. o 17 analysis reports. o 20 miscellaneous studies. **Performance indicator** Percentage of entitlement by water type covered by the water accounting reports: • Current: o Regulated river: 95%. o Unregulated river: 15%. o Groundwater: 90%. • Forecast: o Regulated river: 100%. o Unregulated river: 60%. o Groundwater: 95%.	Stakeholder confidence in consistent, repeatable and comparable water accounts.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W05	**Water management implementation**		**The implementation of procedures and systems to deliver the provisions of water management plans, blue-green algal management and environmental water management, the assessment and evaluation of these plans, and compliance with long-term extraction limits.**		
W05-01	Systems operation and water availability management	The preparation and implementation of the procedures and systems required to deliver the provisions of water management plans; and operational oversight to ensure plan compliance, the available water determinations and the assessment of compliance with long term extraction limits.	• Implementation procedures and systems. • Water availability determinations. • WaterNSW operations compliance monitoring and annual reporting. • Audit of Water Sharing Plan operations.	**Output measure (OM14)** Annual compliance review on WaterNSW work approval conditions. Available Water Determinations (AWD) issued: • Current: o Regulated river: at least monthly AWD for all licence categories for all water sources. o Unregulated river and groundwater: annual AWD for each water source. • Forecast: o As above. **Performance indicator** Annual compliance review on WaterNSW submitted within 3 months of receiving input data from WaterNSW. Timeliness of AWDs: • Current: 100%. • Forecast: as above.	Sustainable operation and utilisation of water resources.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W05-02	Blue-green algae management	The provision of an algal risk management system; including oversight, coordination and training, the issue of algal alerts and the development of algal risk management plans.	• Algal risk management framework for fresh and marine waters managed appropriately. • Issue of algal alerts as required, provision of regular updates to stakeholders and maintenance of the algal website and information line.	**Output measure (OM15)** Algal risk management plans for each region are implemented: • Current: Nine regional risk management plans in operation. • Forecast: All risk management plans reviewed and updated as required. **Performance indicator** Percentage of reports meeting weekly timeframe to regional algal coordinating committees and state algal coordinator of alert levels based on algal data. • Current: 100%. • Forecast: 100%. Actions implemented in accordance with algal risk management plan and guidelines: • Current: 100%. • Forecast: 100%.	Risks associated with blue-green algae are mitigated
W05-03	Environmental water management	The development and collaborative governance of environmental flow strategies and assessments; and the use of environmental water to achieve environmental outcomes.	• Collaborative management of planned environmental water in regulated and unregulated rivers. • Collaborative management of adaptive and held environmental water in regulated rivers. • Measurement of the outcomes of environmental water delivery (in selected valley(s). • Snowy River and Murray River increased flows. • Cold Water Pollution (CWP) management and science development.	**Output measure (OM16)** • Delivery of Snowy and Snowy Mountain River increased flows. • Conditions on major dam work approvals to implement environmental watering plans and to mitigate cold water pollution impacts on receiving waters. • Monitor and evaluate water resource plans to determine environmental outcomes. **Performance indicator** Percentage of occasions that Snowy and Snowy Mountain River daily flow target achieved: • 98% of occasions.	Healthy ecosystem function and environmental assets.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W05-04	Water plan performance assessment and evaluation	The assessment, audit and evaluation of the water management plans' appropriateness, efficiency and effectiveness in achieving economic, social and environmental objectives.	Outputs – performance assessment: • Performance and assessment strategy document. • Identification of key knowledge gaps related to assessment of plan management rules, followed by an integrated research program to resolve the knowledge gap. • Publication of ecosystem response conceptual models and preliminary reports that describe ecology/flow management outcomes and provide adequate advice. • Assessment of water plan amendment provisions. Outputs – evaluation: • Assessment of level of plan achievement of: o Economic objectives. o Environmental objectives. o Social/cultural objectives. • Audit and assessment of the level of implementation of provisions in plans. • Each WSP audited every 5 years to determine if its provisions are being actioned. • Completion of evaluation reports for the WSPs as they expire.	**Output measure (OM17)** Number of valleys being assessed under the performance and assessment strategy. • Current: 7. • Forecast: 24. Number of plan audits completed (5 yearly) • Current: 10. • Forecast: 32. Number of plan evaluations completed • Current: 0. • Forecast: 17. **Performance indicator** Percentage of plans incorporated into ecological performance and assessment programs • Current: 30%. • Forecast: 100%. Percentage of plans audited within statutory requirement: • Current: 30%. • Forecast: 100%. Percentage plans evaluated that have come to term: • Current: 0%. • Forecast: 100%.	Adaptive management of water plans to meet the requirements of the *Water Management Act 2000 (and Water Act 2007 (Commonwealth)* when WRPs commence).

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W06	**Water management planning**		**The development, review, amendment, and extension or replacement of water management plans, regional planning and management strategies, and development of the water planning and regulatory framework.**		
W06-01	Water plan development (coastal)	The development, review, amendment, and extension or replacement of water management plans, and the consultation activities associated with developing these plans for the coastal water sources.	• WSPs completed for all non-MDB water sources. • Implementation of the WSP ecosystem performance and assessment strategy. • Review and remake or extension of each WSP as it expires.	**Output measure (OM18)** • 5 WSPs will be reviewed and replaced/extended. • 7 WSPs will be reviewed. • 1 WSP will be reviewed and merged into an existing WSP. **Performance indicator** Cumulative percentage of forecast WSPs reviewed, replaced/extended or merged: • Forecast: 100%.	Statutory water sharing arrangements in place
W06-02	Water plan development (inland)	The development, review, amendment, and extension or replacement of water management plans; the development of additional planning instruments to comply with the Commonwealth Water Act; and the consultation activities associated with developing these plans for the inland water sources.	• Water Resource Plans development for MDB water sources. • Implementation of the WSP Ecosystem Performance and Assessment Strategy. • Each WSP audited every 5 years to determine its provisions are being actioned. • Completion of evaluation reports for the WSPs as they expire. • Remake or extension of each WSP as it expires. • WRP assessment tasks.	**Output measure (OM19)** • 8 WSPs will be reviewed and replaced/extended. • 2 WSPs will be reviewed. • 3 WSPs will be reviewed and merged into an existing WSP. • 22 WRPs will be completed. **Performance indicator** Cumulative percentage of forecast WSPs reviewed, replaced/extended or merged: • Forecast: 100%. Cumulative percentage of forecast WRPs completed: • Forecast: 100%.	Statutory water sharing and water quality management arrangements in place.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W06-03	Floodplain management plan development	The development, review, amendment, and extension or replacement of Floodplain Management Plans, in collaboration with the Office of Environment and Heritage.	Floodplain Management Plan (FMP) development: • Remake of each FMP as it expires.	**Output measure (OM20)** Number of FMPs completed or remade: • 5 new FMPs will be developed. **Performance indicator** Cumulative percentage of forecast FMPs completed: • Forecast: 100%.	Statutory floodplain arrangements in place.
W06-04	Drainage management plan development	The development, review, amendment, and extension or replacement of Drainage Management Plans, to address water quality problems associated with drainage systems.	Drainage Management Plan (DMP) development: • Remake of each DMP as it expires.	**Output measure (OM21)** Number of DMPs completed or remade: • 0 new DMPs will be developed. **Performance indicator** • N/A.	Statutory drainage management arrangements in place.
W06-05	Regional planning and management strategies	The development, evaluation and review of regional water strategies, metropolitan water plans and other planning instruments, including the associated stakeholder engagement.	• Development of regional water strategies, which integrate and set priorities for related special-purpose plans (for example water sharing plans). • Evaluation and ongoing adaptive management of the metropolitan water plans for greater Sydney and the lower Hunter. • Development, assessment and review of planning instruments.	**Output measure (OM22)** • 2 regional water strategies (metropolitan water plans) will be reviewed. • 6 new regional water strategies will be completed. **Performance indicator** Cumulative percentage of forecast metropolitan water plans being reviewed: • Forecast: 100%. Cumulative percentage of forecast regional water strategies completed: • Forecast: 100%.	Water management plans that satisfy existing and future water supply needs.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W06-06	Development of water planning and regulatory framework	The development of the operational and regulatory requirements and rules for water access.	• Developed, amended and refined regulatory instruments and policies putting in place an improved regulatory framework for water management planning. • Requirements for issuing new water licences clearly defined and understood by users. • Requirements for equitable water take defined and improved.	**Output measure (OM23)** Number of regulatory instruments and policies developed or amended according to an annual forecast: • Forecast on an annual basis. **Performance indicator** Percentage of annual forecast frameworks and regulatory instruments delivered according to schedule: • Forecast: 100%.	An effective and efficient water planning and management framework.
W06-07	Cross border and national commitments	The development of interstate water sharing arrangements and the implementation of operational programs to meet national and interstate commitments.	• Development and implementation of operational programs to meet NWI commitments. • Biennial assessments on progress with implementing NWI agreements on water reform agenda. • Participation in relevant interstate committees progressing NWI and COAG water reform initiatives. • Development of interstate water sharing arrangements through MDB and Border Rivers agreements, and Snowy and ACT arrangements.	**Output measure (OM24)** Full participation in interstate processes to manage water. **Performance indicator** Compliance with key interstate agreements: • Current: 100%. • Forecast: 100%.	National and interstate agreements successfully negotiated and implemented.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W07	**Water management works**		**The undertaking of water management works to reduce the impacts arising from water use or remediate water courses**		
W07-01	Water management works	The undertaking of water management works to reduce the impacts arising from water use or remediate water courses.	Water management works to mitigate resource impacts: • Riverbank protection. • Salt interception schemes.	**Output measure (OM25)** High priority areas of erosion identified and remediated: • Current: 90%. • Forecast: 90%. Maintain salinity (EC) credits for NSW **Performance indicator** Channel output capacity at Tumut maintained at 9,200ML/day.	Remediation of environmental impacts arising from water use.
W08	**Water regulation management**		**The development, operation and management of the administration of licences, approvals, their associated transactions and compliance management and enforcement**		
W08-01	Regulation systems management	The management, operation, development and maintenance of the register for access licences, approvals, trading and environmental water.	Management and operation of public register for access licence approvals, trading and environmental water. Systems development: • Online tools. • Online applications. • Online payments. • Smart phone tracking of applications.	**Output measure (OM26)** Number of applications received online: • Current; 2,000. • Forecast: 2,500. **Performance indicator** Percentage of all applications received online: • Current: 33%. • Forecast: 42%.	A water regulation system that effectively records water entitlements, approvals and conditions for water use.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W08-02	Consents management and licence conversion	The transcribing of water sharing provisions into licence conditions and the conversion of licences to the Water Management Act.	• Licences cleansed for conversion to WMA. • Volumetric licence conversions. • Water sharing provisions transcribed into licence conditions. • Development of discretionary conditions.	**Output measure (OM27)** Annual number of licences recorded on the public register plus number of access licence and approvals with updated conditions: • Current: All licences recorded on public register. • Forecast: All licences recorded on public register – the number varies from year to year. **Performance indicator** Percentage of access licences and changes to licence details recorded on the public register within two months of implementation or update of sharing plan: • Current: 90%. • Forecast: 90%.	Water regulation records maintained to reflect current regulatory requirements.
W08-03	Compliance management	The on-ground and remote monitoring activities (including investigations and taking statutory actions) to ensure compliance with legislation, including licence and approval conditions.	Compliance education, monitoring, and breach management/enforcement/ investigation.	**Output measure (OM28)** Number of breach reports received: • Current: 600. • Forecast: 600. **Performance indicator** Percentage of non-basic landholder rights approvals audited each year: • 2%. Percentage of properties audited that are in compliance with licence and approval conditions (excluding those audited as part of investigating an alleged breach): • 90%. Percentage of breach reports risk assessed within 14 days of receipt: • 90%. Percentage of all cases finalised within 6 months: • 70%.	Water take and use compliance with regulatory requirements.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W08-99	Water consents overhead	The administrative overhead costs associated with water consent transactions, which are passed on to customers in the water management tariff.	Overhead support and facilities for consent transactions.	**(OM29) -** Overhead charge associated with consent transactions.	

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W09	**Water consents transactions**		**The technical requirements for, and administration of, water consents transactions**		
W09-01	Water consents transactions	Transactions undertaken on a fee for service basis; including dealings, assessments, changes to conditions and new applications for water licences and approvals.	• Water consents transactions processed. • Licences in compliance with regulatory requirements.	**Output measure (OM30)** Number of applications processed: • Current: 6,000 • Forecast: Process all applications received. **Performance indicator** Percentage of applications for licence dealings assignment of shares (71Q) processed within 20 days: • 90%. Percentage of applications for new access licences processed within 40 days: • 80%. Percentage of applications for water management work and use approvals processed within 60 days: • 80%. Percentage of applications to extend a water management work approval processed within 20 days: • 90%. Percentage of applications for an approval for a bore for domestic and stock rights processed within 10 days: • 90%. Percentage of legal searches completed within the preferred processing time frame: • 95%.	Up-to-date documentation of licensed access and use of water.

Code	Activity Name	Statement of Activity	Outputs	Output Measure/Performance indicator	Outcome
W10	**Business and customer services**		**The customer, business and revenue collection services supporting the operation of the DPI Water.**		
W10-01	Customer management	All customer liaison activities; including responding to calls to licensing and compliance information lines; and producing communication and education materials such as website content and participation in customer forums.	Timely responses to customer enquiries.	**Output measure (OM31)** Number of enquiries: • Current: 10,000. • Forecast: 10,000. **Performance indicator** Percentage of enquiries directly responded to at the time of the call/email: • Current: 90%. • Forecast: Maintain or improve current status.	Informed and satisfied customers.
W10-02	Business governance and support	The business systems and processes that support organisation-wide activities; including asset management, annual reporting and pricing submissions to IPART.	Business systems, processes and administration for commercial operation of government monopoly water services.	**Output measure (OM32)** • Annual reporting to IPART and ACCC. • Annual performance reporting to customers. **Performance indicator** Annual reporting within agreed timeline from end of financial year: • Reporting to IPART and ACCC: 4 months. • Reporting to customers: 6 months.	Water management activities supported and developed to meet stakeholder needs.
W10-03	Billing management	The management of billing requirements and subcontracted billing, revenue collection and debtor management service delivery, and responding to queries on billing activities.	Water billing and payment processing.	**Output measure (OM33)** Number of bills issued: • Current: 65,000. • Forecast: 65,000. **Performance indicator** Percentage of billing revenue collected within 3 months of the bills being issued: • Current: 93%. • Forecast: 95%.	Revenue collected for water management activities.

Glossary

2011 Determination	IPART's Determination No. 4, 2010 entitled "IPART, *Review of Prices for the Water Administration Ministerial Corporation from 1 July 2011 – Determination and Final Report,* February 2011" for the period 1 July 2011 to 30 June 2014.
2016 Determination	Refers to the upcoming price period – ie, prices from 1 July 2016.
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
AWD	Available Water Determination
The Basin	Murray-Darling Basin
BRC	Dumaresq-Barwon Border Rivers Commission
COAG	Council of Australian Governments
Entitlement	ML of entitlement under the *Water Act 1912* (NSW) or unit shares under the *Water Management Act 2000* (NSW).
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.
FPH	Floodplain harvesting
FTEs	Full-Time Equivalent staff
GL	Gigalitre

Government share	The share of NOW's revenue requirement that is recovered from treasury, determined according to the 'impactor pays' principle.
IPART	The Independent Pricing and Regulatory Tribunal of NSW
IPART Act	*Independent Pricing and Regulatory Tribunal Act 1992* (NSW)
MDBA	Murray-Darling Basin Authority
MDB Agreement	Murray-Darling Basin Agreement
ML	Megalitre
Notional revenue requirement	Revenue that would be recovered from users if prices were set to fully recover efficient costs.
NOW	NSW Office of Water (in the Department of Primary Industries)
NWI	National Water Initiative
RAB	Regulatory Asset Base
RBA	Reserve Bank of Australia
SCA	Sydney Catchment Authority (Now WaterNSW)
State Water	State Water Corporation (Now WaterNSW)
SDL	Sustainable Diversion Limits
Target revenue	The revenue that IPART expects an agency to recover through prices.
Usage	Water extracted by 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
WAMC	Water Administration Ministerial Corporation

WaterNSW	WaterNSW is the organisation responsible for managing raw water supply across NSW by bringing together the Sydney Catchment Authority (SCA) and State Water Corporation (State Water) (at 1 January 2015).
WaterNSW (Greater Sydney)	WaterNSW (Greater Sydney) is used to refer to the former SCA - separate price determination for the services previously provided by SCA.
WaterNSW (Rural)	WaterNSW (Rural) is used to refer to the former State Water - separate price determination for the services previously provided by State Water.
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.
WMA	*Water Management Act 2000* (NSW)
WSP	Water Sharing Plan