IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Review of prices for WaterNSW Greater Sydney area

From 1 July 2016

Water — Issues Paper
September 2015

IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Review of prices for WaterNSW Greater Sydney area

From 1 July 2016

Water — Issues Paper
September 2015

ISBN 978-1-925340-16-7 DP181

The Tribunal members for this review are:

Dr Peter J Boxall AO, Chairman

Ms Catherine Jones

Mr Ed Willett

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

John Madden (02) 9113 7780

Veronika Henkel (02) 9290 8487

Independent Pricing and Regulatory Tribunal of New South Wales
PO Box K35, Haymarket Post Shop NSW 1240
Level 15, 2-24 Rawson Place, Sydney NSW 2000

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

www.ipart.nsw.gov.au

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 5th October 2015.

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:

Prices for WaterNSW Greater Sydney Area
Independent Pricing and Regulatory Tribunal
PO Box K35,
Haymarket Post Shop NSW 1240

Late submissions may not be accepted at the discretion of the Tribunal. Our normal practice is to make submissions publicly available on our website <www.ipart.nsw.gov.au> as soon as possible after the closing date for submissions. If you wish to view copies of submissions but do not have access to the website, you can make alternative arrangements by telephoning one of the staff members listed on the previous page.

We may choose not to publish a submission—for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. IPART will then make every effort to protect that information, but it could be disclosed under the *Government Information (Public Access) Act 2009* (NSW) or the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW), or where otherwise required by law.

If you would like further information on making a submission, IPART's submission policy is available on our website.

Contents

1 Introduction

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) has begun a review to determine the maximum prices WaterNSW can charge for the water services it provides to customers in the Greater Sydney (GS) area. These services include:

- Bulk water, which it supplies to four water utilities (Sydney Water Corporation, Wingecarribee Council, Shoalhaven Council and Goulburn-Mulwaree Council). These utilities then treat this water and on-sell it to their residential and non-residential customers.
- Raw and unfiltered water, which it supplies to 61 retail customers along its bulk water supply system.[1]

Prior to 1 January 2015, these services were provided by the former Sydney Catchment Authority (SCA) which, together with the former State Water Corporation (State Water), now forms WaterNSW.

We will make a determination on WaterNSW's bulk water prices in the GS area for a period of up to five years, starting 1 July 2016 (the 2016 determination period). We will conduct a separate review to determine WaterNSW's prices in the rest of the state in 2017.

This Issues Paper explains the process we will follow to conduct the review, the approach we will use to make our pricing decisions, and the key issues we will consider in making these decisions. It also sets out our preliminary views on some of these issues (where we have them). We invite all interested parties to make submissions in response to this paper.

All dollar figures quoted in this Issues Paper are in $2015-16, unless stated otherwise.

1 WaterNSW pricing proposal to IPART, June 2015, pp 36-37.

1.1 Process for conducting the review

Our process for this review is slightly different to our previous water price reviews. It will still include public consultation and detailed analysis by IPART and expert consultants. However, we have decided to adopt a propose-response process.

In particular, we have reordered the review timetable so we received WaterNSW's pricing proposal[2] before we prepared this Issues Paper and engaged a consultant to review expenditure. This has several benefits. For example, it enables us to use the information in the utility's proposal to better identify the issues that require consideration by stakeholders and our consultant. It also allows the utility to make its proposal without being potentially constrained by the topics raised in our Issues Paper.

We received WaterNSW's pricing proposal on 30 June 2015.[3] We expect to engage a consultant by September to review operational and capital expenditure as outlined by WaterNSW. We now invite stakeholders to make submissions in response to this Issues Paper and WaterNSW's pricing proposal.[4] We will hold a public hearing to provide stakeholders with another opportunity to provide their views on WaterNSW's pricing proposal and key issues for this review.

We will consider all comments made in submissions and at the public hearing before making our draft decisions. We will then release a Draft Report and Draft Determination, and invite further comments from stakeholders and WaterNSW. We will consider all these comments before making our Final Determination and publishing our Final Report.

An indicative review timetable is set out in Table 1.1. We will update the timetable on our website as the review progresses.

2 WaterNSW pricing proposal to IPART, June 2015.

3 We sent an information request to former Sydney Catchment Authority in November 2014, which contained information on the review process and our information requirements to assist it in preparing its submission.

4 Details on how to make a submission are provided on page iii at the start of the paper.

Table 1.1 Indicative review timetable

Task	Timeframe
Receive pricing proposal from WaterNSW	30 June 2015
Release Issues Paper	7 September 2015
Receive submissions to the Issues Paper and to WaterNSW's pricing proposal	5 October 2015
Hold Public Hearing	10 November 2015
Release Draft Report and Draft Determination	Late-March 2016
Receive submissions to the Draft Report	Mid-April 2016
Release Final Report and Determination	Mid-June 2016

Note: These dates are indicative and are subject to change.

1.2 WaterNSW's Pricing Proposal for Greater Sydney area

WaterNSW proposed a total revenue requirement of $815.8 million ($2015-16) over the 4-year period from 2016-17 to 2019-20. This represents an average revenue requirement of around $204 million per annum, which is approximately $7 million per annum less than allowed for in the 2012 Determination (which covered the four years from 2012-13 to 2015-16).[5]

WaterNSW's proposed revenue requirement is shown in Table 1.2, and is broken down by expenditure type in Figure 1.1.

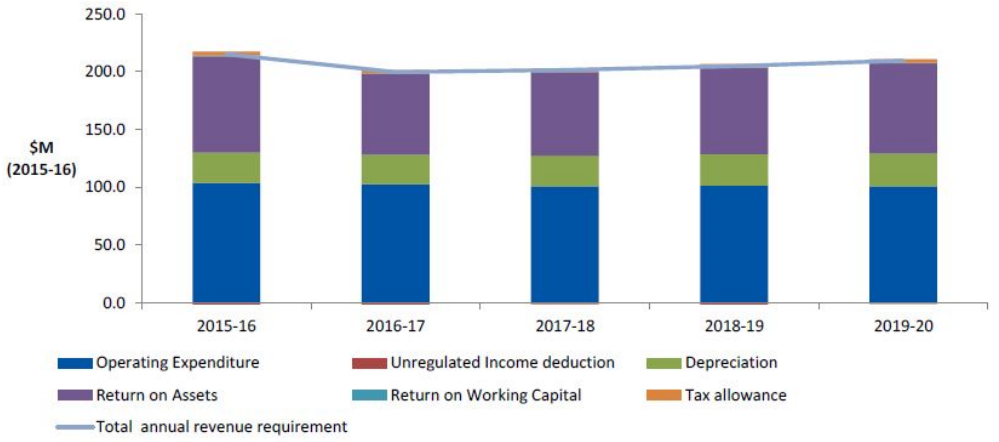
Table 1.2 WaterNSW's proposed revenue requirement for GS area ($2015-16 million)

	2015-16 Current	2016-17	2017-18	2018-19	2019-20
Revenue requirement	215.2	199.7	201.5	204.9	209.7
Change year on year		-7.2%	0.9%	1.7%	2.3%

Source: WaterNSW pricing proposal to IPART, June 2015, p 47.

5 IPART calculation, based on WaterNSW RAB numbers (WaterNSW pricing proposal, June 2015, pp 30 and 47).

Figure 1.1 WaterNSW's proposed revenue by expenditure type



Data source: WaterNSW pricing proposal to IPART, June 2015, pp 8 and 47.

1.2.1 Proposed prices and impacts

Prices to Sydney Water Corporation

WaterNSW proposed that its bulk water charges to Sydney Water Corporation (Sydney Water) decrease in 2016-17 and increase slightly over the determination period (excluding the effects of inflation). Under this proposal, its revenue requirement from Sydney Water in 2019-20 is 3% lower than in 2015-16 in real terms.

WaterNSW proposed to maintain the approach to volumetric charges we introduced in the 2012 Determination. Under this approach, the volumetric charge to Sydney Water varies with the Sydney Desalination Plant's (SDP's) mode of operation. When the SDP is operating, this charge increases in proportion to SDP's increased sales of water to Sydney Water. This approach ensures WaterNSW recovers its efficient costs, even when it supplies less water to Sydney Water (ie, when water supplied by SDP displaces supply from WaterNSW).[6]

6 The 2012 Determination simply included two WaterNSW (then SCA) volumetric charges to Sydney Water: a lower volumetric price when SDP is not operating (and therefore WaterNSW is supplying more water to Sydney Water); and a higher volumetric price when SDP is operating at full capacity (and therefore WaterNSW is supplying proportionally less water to Sydney Water). WaterNSW's pricing proposal for this review includes a mechanism to adjust its volumetric charges to Sydney Water to account for various modes of SDP operation (in addition to simply 'on' and 'off') in the event that the Government amends the SDP's operating rules.

Table 1.3 shows WaterNSW's proposed prices and revenue for Sydney Water when SDP is not operating. When SDP is operating at full capacity, the proposed volumetric charge is $15.27 per ML (or around 20%) higher on average.[7]

Table 1.3 WaterNSW's proposed prices and revenue for Sydney Water – SDP off ($2015-16)

	2015-16 Current	2016-17	2017-18	2018-19	2019-20
Fixed charge ($M/month)	14.17	13.22	13.34	13.57	13.89
Volumetric charge ($/ML)	85.81	75.17	75.08	75.73	76.63
Revenue from fixed charge ($M)	170.05	158.68	160.13	162.87	166.69
Revenue from volumetric charge ($M)	44.85	39.67	40.03	40.72	41.67
Total revenue ($M)	**214.90**	**198.35**	**200.16**	**203.59**	**208.36**
Change in revenue year on year		-8%	1%	2%	2%

Source: WaterNSW pricing proposal to IPART, June 2015, p 57.

The proposed cost of WaterNSW's bulk water services represents 8.4% of Sydney Water's total proposed revenue requirement over the 4-year period.[8]

WaterNSW indicated that under its pricing proposal, it would contribute a slight decrease to average annual residential water bills to Sydney Water customers. For example, for a residential customer who uses 200 kL of water a year, WaterNSW's proposed prices would contribute an annual bill decrease of $9.65 in 2016-17 compared to 2015-16 (all other things being equal).

Information on Sydney Water's proposed prices to its residential and non-residential customers can be found in its pricing proposal and in our Issues Paper on our concurrent review of Sydney Water's prices, both of which are on the IPART website.[9]

Prices to Wingecarribee, Shoalhaven and Goulburn-Mulwaree councils

WaterNSW proposed a total revenue requirement from the Wingecarribee, Shoalhaven and Goulburn-Mulwaree councils (the councils) of $1.1 million per annum (in real terms). This means its revenue from the bulk water prices paid by the councils will decrease by $0.3 million (or 22%) in 2016-17 when compared to 2015-16, and then remain constant until the end of the 4-year period in real terms.

7 WaterNSW pricing proposal to IPART, June 2015, p 57.

8 IPART calculation, based on WaterNSW bulk water costs as a percentage of the total cost base of Sydney Water (Sydney Water pricing proposal, June 2015, pp 83 and 149).

9 http://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Metro_Pricing/Review_of_prices_for_Sydney_Water_Corporation_from_1_July_2016

WaterNSW also proposed a change to the structure of its prices to the councils. The proposed structure aligns with the structure of its prices to Sydney Water, which has been in place since the 2012 Determination. Under this structure, 80% of WaterNSW's proposed revenue requirement from each council would be recovered through a fixed charge.

Prices to unfiltered and raw water customers

WaterNSW proposed a total revenue requirement of $0.3 million per annum from its unfiltered and raw water customers, and no real change in prices for these customers over the 2016 determination period (ie, other than the effects of inflation).

WaterNSW also proposed that the structure of these prices remain unchanged. This structure includes a fixed charge ($/meter) and a volumetric change (c/kL) for unfiltered water customers and a volumetric charge ($/ML) for raw water customers.

1.2.2 Cost drivers

WaterNSW attributed its proposed reduction to its revenue requirement for the 2016 determination period to the following factors:

- lower than expected funding costs from financial markets resulting in a decrease in its forecast real Weighted Average Cost of Capital (WACC) from 5.6% to 4.58%, and
- forecast savings of about 3% in real terms in its operating expenditure over the period, driven by internal efficiency reforms associated with the merger of SCA and State Water.

WaterNSW proposed operating expenditure of $405.7 million over the 4-year period, or around $100 million per annum (which includes the forecast savings noted above). It proposed capital expenditure of $373 million.

WaterNSW's proposed capital expenditure is substantially higher than its actual capital expenditure over the 2012 determination period of $127.7 million.[10] In particular, it proposes to spend 192% more on capital works over the next four years than it spent over the previous four years. According to WaterNSW, the proposed capital program from 2016-17 to 2019-20 is largely driven by the need to service growth in water demand.

WaterNSW indicated that from 2019-20 onwards, its capital expenditure will be dominated by the Shoalhaven Transfers project. This project will augment the pipeline that moves water between the Burrawang and Avon Reservoirs to secure Greater Sydney's next tranche of water supply.

[10] This figure includes forecasts for 2014-15 and 2015-16 years.

1.2.3 Proposed changes to the form of regulation

WaterNSW proposed two changes to the form of regulation, including the introduction of:

- an Efficiency Benefit Sharing Scheme (EBSS), and
- a performance incentive scheme – the Raw Water Quality Incentive Payment (RWQIP).

The proposed EBSS would reward WaterNSW for making operating cost savings through efficiency gains by allowing it to keep a defined proportion of these savings, rather than passing them all on to customers at the beginning of the next determination period. The scheme would apply to operating expenditure only, would include penalties, exclude non-controllable costs, and have a 4-year carryover period. WaterNSW proposed a 'Cap and Collar' of 5%, which would limit its gains and losses under the scheme for the 2016 determination period.

The proposed RWQIP scheme has been agreed with Sydney Water, although it has not been implemented. Under this scheme, Sydney Water would pay WaterNSW up $1 million if WaterNSW is able to supply water that is better than the rolling 5-year average of a set of specified water quality indicators. This payment would reflect the treatment costs Sydney Water avoids as a result of the enhanced water quality.

1.3 Approach for making pricing decisions

To reach our decisions on the prices WaterNSW can charge its customers in the GS area, we propose to use an approach that involves the following six steps:

1. Decide on the length of the determination period and the approach for calculating WaterNSW's notional annual revenue requirement over this period.
2. Calculate this notional revenue requirement.
3. Decide on the form of regulation and other regulatory mechanisms to apply.
4. Decide on forecast water sales volumes and customer numbers.
5. Decide on price structures and levels to generate the revenue requirement, in line with our decisions on the form of regulation, and forecast sales and customer numbers.
6. Consider the implications of these prices to ensure they strike the right balance between matters we are required to consider.

1.4 Structure of this Issues Paper

The remainder of this Issues Paper provides more information on this review, WaterNSW's pricing proposal, and our preliminary response to the Proposal:

- Chapter 2 outlines context for the review, including key developments in WaterNSW's regulatory environment over the past four years that will affect our decisions and inputs into this review.
- Chapters 3 to 9 discuss the issues related to the steps in our approach for setting prices:
  - Chapter 3 covers the length of the determination period and the approach for calculating the notional annual revenue requirement.
  - Chapters 4 to 6 focus on the key inputs for applying this approach, including the allowances for efficient operating expenditure, prudent and efficient capital expenditure, and the allowances for a return on capital, regulatory depreciation and tax.
  - Chapter 7 considers the form of regulation, including an efficiency benefit sharing scheme and a raw water quality incentive payment scheme.
  - Chapter 8 covers the forecast sales volumes and customer numbers.
  - Chapter 9 discusses price structures and levels.

In each of these chapters, there are questions on which we particularly seek stakeholder comment. For convenience, these questions are also listed below. Stakeholders are also welcome to provide input on other issues related to this review.

1.5 List of issues for stakeholder comment

Length of the determination period

Operating expenditure

Water sales and customer numbers

Price structure and prices

2 Context for the review

This review will be conducted under section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992* (the IPART Act).[11] In making our price determination, we will have regard to the requirements of section 15 of the IPART Act (see Appendix A).

To provide the context for this review, the sections below outline the formation of WaterNSW, its regulatory framework and other key developments in its regulatory environment since our 2012 Determination. These developments affect our decisions and inputs into this review, and include other recent or ongoing water pricing reviews, the current Metropolitan Water Plan (2010 MWP) and the Hawkesbury-Nepean Valley Flood Management Review.

2.1 Merger of Sydney Catchment Authority and State Water

On 1 January 2015, the NSW Government formed WaterNSW under the *Water NSW Act 2014* (the Water NSW Act), through the merger of the SCA and State Water. The merger potentially impacts the way we regulate prices for the services WaterNSW provides in the GS area (formerly provided by SCA) and its rural services (formerly provided by State Water). We could conduct a single price review and determination process for the new merged entity, or we could continue to conduct separate processes.

For this review, we have decided to review WaterNSW's GS prices separately from its rural prices. We will review the prices for WaterNSW's rural services in 2017. In future reviews, our process will depend on relevant considerations at the time, including regulatory arrangements, any restructuring of the merged entity and/or changes to service delivery.

[11] Section 11 of the IPART Act provides us with a standing reference to determine maximum prices for WaterNSW (but excluding any services provided by Water NSW in respect of which fees and charges may be approved or determined in accordance with Part 6 or 7 of the *Water Charge (Infrastructure) Rules 2010*).

2.2 WaterNSW's regulatory framework

The roles and responsibilities of WaterNSW are prescribed by the *Water NSW Act 2014*, and the operating licence issued to the former SCA. Under Section 6 of the *Water NSW Act 2014*, WaterNSW is required to meet the following primary objectives:

- capture, store and release water in an efficient, effective, safe and financially responsible manner
- supply water in compliance with appropriate standards of quality
- ensure that declared catchment areas and water management works in such areas are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment
- provide for the planning, design, modelling and construction of water storages and other water management works, and
- maintain and operate the works of WaterNSW efficiently and economically and in accordance with sound commercial principles.

It also has other objectives, including: to be a successful business; exhibit a sense of social responsibility towards the community and regional development; and conduct its operations in compliance with the principles of ecologically sustainable development.

WaterNSW's operations are governed by a number of regulatory requirements and licensing regimes, including:

- **IPART (pricing)**. We are responsible for setting the maximum prices that WaterNSW can charge for its monopoly services.
- **IPART (licensing).** We are also responsible for monitoring and reporting on WaterNSW's compliance with its operating licence, including its obligations in relation to customer service, water quality, and system performance.
- **NSW Dam Safety Committee.** The Committee is responsible for prescribing dam safety requirements and monitoring compliance of WaterNSW's prescribed dams with those requirements.
- **NSW Health.** NSW Health provides advice to WaterNSW on public health issues in regard to drinking water. The Memorandum of Understanding (MoU) between NSW Health and WaterNSW recognises the role of each agency in relation to water quality standards and public health.
- **Department of Primary Industries Water (DPI Water, formerly the NSW Office of Water).** DPI Water is responsible for licensing WaterNSW's extractions of water from the natural environment and regulating its releases of water to the environment.

- **Environment Protection Authority (EPA).** The EPA is responsible for monitoring WaterNSW's compliance with EPA's regulatory instruments relating to environment protection. The MoU between the two agencies recognises their role in protecting the environment of NSW.
- **Catchment Audits.** Under the WaterNSW Act, WaterNSW is required to conduct catchment audits every three years, and asses the state of the catchments having regard to catchment health indicators, and document its findings in its annual Catchment Activities report.
- **Water supply agreements.** The agreements outline the arrangements between WaterNSW and its customers for the supply of water.

IPART audits WaterNSW's activities in the GS area for compliance with the Operating Licence and reports to the Minister each year. We completed our last operational audit in December 2014, for the period 1 July 2013 – 30 June 2014.[12]

We found that over the audit period, WaterNSW achieved full compliance with requirements relating to water supply sufficiency, catchment and environmental management, and high compliance with requirements relating to water quality.[13]

2.3 Other IPART price reviews

We have recently completed or are concurrently conducting a number of reviews that affect the inputs to our calculations of WaterNSW's revenue and prices. These include reviews related to WaterNSW's:

- forecast water sales to Sydney Water, and
- financing costs and tax allowance.

2.3.1 Reviews related to WaterNSW's forecast water sales

We are currently conducting a review to determine Sydney Water's maximum prices from 1 July 2016. By running concurrent price reviews for WaterNSW GS and Sydney Water, we will be able to use our decisions on WaterNSW's prices in determining Sydney Water's bulk water costs and in calculating its prices for end-use customers.

We will also be able to use our decisions on Sydney Water's forecast water sales to end-use customers to inform our decisions on WaterNSW's prices. WaterNSW's sales to Sydney Water account for 99% of its total water sales in the GS area.[14]

---

12 IPART, *Sydney Catchment Authority Operational Audit 2013/14 - Compliance Report*, December 2014.

13 IPART, *Sydney Catchment Authority Operational Audit 2013/14 - Compliance Report*, December 2014, p 1.

14 WaterNSW pricing proposal to IPART, June 2015, p 28.

However, there will still be some uncertainty about WaterNSW's forecast sales to Sydney Water over the 2016 determination period, due to uncertainty about the operating regime of the Sydney Desalination Plant (SDP). When SDP is operating, Sydney Water is required to purchase bulk water from the plant, and these purchases can displace WaterNSW's sales to Sydney Water.

SDP's operating regime is set out in the MWP, which states that:[15]

> …the plant will operate at full production capacity and supply desalinated water to Sydney Water's area of operations when the total dam storage level is below 70 percent and will continue to do so until the total dam storage level reaches 80 percent.

At full production, the SDP can supply about 90,000 ML of water per annum; if it were to operate at full production for the next four years, it could reduce WaterNSW's water sales to Sydney Water by about 17% per annum.[16]

At this stage, we do not know if and when SDP will operate over the proposed determination period. There is also some uncertainty about the future operating regime itself, as the MWP is currently under review. IPART's next review of SDP's prices is scheduled to commence in June next year, for new prices to take effect from 1 July 2017.

The issue of WaterNSW's forecast water sales to Sydney Water is discussed in more detail in Chapter 8.

2.3.2 Reviews related to WaterNSW's financing costs and financeability

Since making our 2012 Determination of SCA's prices, we have conducted several reviews that affect the way we determine a utility's financing costs and assess its financeability. These include reviews of our approach to:

- estimating the cost of debt, the cost of equity, and the decision rule for choosing the Weighted Average Cost of Capital (WACC) point estimate
- estimating the inflation adjustment used in determining the real post-tax WACC[17]
- estimating the debt margin parameters of the WACC[18]
- assessing the short-term financial sustainability of regulated utilities and elements of our financeability test[19], and
- calculating the credit ratios we use in our financeability test, including Funds From Operations (FFO), Debt Gearing and FFO over debt.[20]

15 NSW Government, *2010 Metropolitan Water Plan*, August 2010, p 36.
16 IPART calculation based on WaterNSW's forecasts of total bulk water sales.
17 IPART, *Fact Sheet - New approach to forecasting the WACC inflation adjustment,* March 2015.
18 IPART, *Fact Sheet - New approach to estimating the cost of debt,* April 2014.
19 IPART, *Financeability tests in price regulation – Final Decision*, December 2013.

WaterNSW has indicated that it supports us adopting our revised WACC methodology, and considers that this methodology provides improved certainty and stability in the rate of return. During the merger process, WaterNSW took the opportunity to restructure the former SCA's debt portfolio to mirror IPART's cost of debt methodology.[21]

2.4 Metropolitan Water Plan and Hawkesbury-Nepean Valley Flood Management review

WaterNSW's pricing proposal is based on currently available information about planned water security and flood management measures in the GS area. However, the NSW Government is currently conducting two reviews that may have implications for these measures, and thus for WaterNSW's expenditure programs over the 2016 period. These include a review of the 2010 MWP, and the Hawkesbury-Nepean Valley Flood Management Review.

2.4.1 Metropolitan Water Plan

The NSW Government's MWP outlines the planned mix of water supply and demand management measures that ensure Sydney, the Illawarra and the Blue Mountains have enough water now and for the future. The MWP is reviewed periodically. It was first developed in 2004 in response to indications that drought was taking hold, and was updated in 2006 due to deepening drought, and again in 2010 as part of the review cycle.[22]

The 2010 MWP is currently being reviewed to take account of changes in demand and supply, and new data and research. The Metropolitan Water Directorate (responsible for developing the plan) has adopted a phased approach to the review of the 2010 MWP, with reports to the NSW Government at the end of each phase:[23]

- **Phase 1** – scoping, research and investigations and community engagement (complete).
- **Phase 2** – portfolio development and assessment, including hydro-economic modelling; review of options for future water conservation and recycling; preliminary business case for releasing e-flows from Warragamba Dam; community engagement; development of a monitoring, evaluation, reporting and improvement (MERI) plan (commenced).

---

20 IPART, *Financeability ratios – Final Decision*, April 2015.
21 WaterNSW pricing proposal to IPART, June 2015, p 48.
22 NSW Government, Metropolitan Water Directorate, *Updating the Plan*, accessed on 12 June 2015 from http://www.metrowater.nsw.gov.au/planning-sydney/updating-plan
23 NSW Government, Metropolitan Water Directorate, *Updating the Plan*, accessed on 12 June 2015 from http://www.metrowater.nsw.gov.au/planning-sydney/updating-plan/current-review

- **Phase 3** – further hydro-economic modelling and community engagement before finalising the preferred portfolio of measures for securing water supply.
- **Phase 4** – Government consideration and endorsement of the revised plan.

Of particular relevance to our review of WaterNSW's prices is any decision on future infrastructure works including:

- rehabilitation and replacement of the Upper Canal
- environmental flows infrastructure for Warragamba Dam, and
- upgrades to the Shoalhaven transfer system.

Other areas where the review of the MWP could affect WaterNSW include the operating rules for the SDP and water restriction rules, which alter the demand for water in drought and hence slow depletion of the storages.

WaterNSW indicated that it has based its pricing proposal on the 2010 MWP, with some modifications to reflect updated water demand forecasts. Its forecast capital program includes updated provisions for Shoalhaven transfers works (discussed in Chapter 5). However, it expects that the next MWP will provide guidance on the requirement and timing of water security investments, and thus may affect its capital and operating plans during the 2016 determination period.

WaterNSW asked that IPART consider re-opening the 2016 Determination if the revised MWP necessitates substantial changes to its proposed capital expenditure plans.[24] If WaterNSW requested that we conduct an early price determination, we would consider the request at that time. In doing so, we would take into account a range of factors, including the magnitude of any unforeseeable or unexpected cost, the implications of such a cost variation on WaterNSW and its service levels, and any potential offsetting effects that may have occurred in the determination period (eg, cost savings in other areas or higher than forecast revenue).

2.4.2 Hawkesbury-Nepean Valley Flood Management Review

The NSW Government is also examining ways to mitigate flood risk in the Hawkesbury-Nepean Valley, downstream of Warragamba Dam.[25] Following preliminary investigations, a taskforce was appointed in early 2014 to identify ways to improve the local communities' ability to respond to floods and examine various flood mitigation options.

---

24 WaterNSW pricing proposal to IPART, June 2015, p 43.

25 NSW Government, Department of Primary Industries, *Hawkesbury-Nepean Valley Flood Management Review*, accessed on 12 June 2015 from http://www.water.nsw.gov.au/water-management/water-availability/flood-management/hawkesbury-nepean-valley-flood-management-review

The options being considered may have implications for WaterNSW's expenditure program. However, as the review is yet to conclude, WaterNSW could not directly take account of the taskforce's final recommendations in its pricing proposal.[26]

[26] WaterNSW pricing proposal to IPART, June 2015, p 43.

3 Length of determination period and approach for calculating revenue requirement

As Chapter 1 discussed, the first step in our approach for determining WaterNSW's prices is to decide on the length of the determination period and the approach for calculating WaterNSW's notional annual revenue requirement over this period. The sections below outline WaterNSW's proposal and our response on each of these issues.

3.1 Length of the determination period

For each water pricing review, we make a decision on the length of the determination period. In general, this period may be between one and five years, depending on the circumstances. The period of the current 2012 Determination is four years.

3.1.1 WaterNSW's proposal for length of determination period

WaterNSW proposed a 4-year determination period from 1 July 2016 to 30 June 2020.[27] In its submission, WaterNSW:

- stated that a 4-year determination period provides "the right balance between providing a stable and certain operating environment while allowing sufficient flexibility to respond to changes in the water industry", and
- asked that its determination period remain aligned with Sydney Water's to minimise regulatory uncertainty for both utilities.[28]

3.1.2 IPART's response on length of determination period

Our preliminary view is that a 4-year determination period is most appropriate for WaterNSW (GS). For most of our recent metropolitan water determinations, we have opted for a 4-year period. In general, we consider a 4-year period strikes an appropriate balance between providing certainty and incentives for efficiency gains for the utility, and limiting delays in customers benefitting from efficiency gains. In the 2012 Determination, our decision to adopt a 4-year period also

27 WaterNSW pricing proposal to IPART, June 2015, p 46.

28 We are currently reviewing Sydney Water's prices which will involve deciding on the length of its next determination period.

aligned the then SCA's price path with those of Sydney Water and Hunter Water Corporation (Hunter Water).

In making our draft decision on this issue, we will consider:

- The range of factors that typically influence the optimal length for a determination period. These factors are outlined in Box 3.1.
- The merits of maintaining the alignment of determination periods across regulated water utilities. Like WaterNSW, Sydney Water and Hunter Water have proposed a 4-year determination period. If we accept the utilities' proposals, their determination periods will remain aligned. The issues we will consider are outlined in Box 3.2.

We also seek the views of stakeholders on the appropriate length of the determination period for WaterNSW, including any views on the merits of alignment of determination periods across regulated entities.

Box 3.1 Factors that influence the optimal length of a determination period

In general, we consider the following factors when deciding on the length of the determination period:

- the confidence we can have in the utility's forecasts
- the risk of structural changes in the industry
- the need for price flexibility and incentives to increase efficiency
- the need for regulatory certainty and financial stability, and
- the benefits of aligning the determination with the term of the operating licence (where applicable).

Longer determination periods have several advantages over shorter periods. For example, they provide greater stability and predictability (which may lower the utility's business risk and assist investment decision making). They also provide strong incentives for the utility to increase efficiency and reduced regulatory costs.

However, longer determination periods also have disadvantages. These include increased risk associated with inaccuracies in the data used to make the determination, possible delays in customers benefitting from efficiency gains, and the risk that changes in the industry will impact the effectiveness of the determination.

Box 3.2 Issues associated with alignment of determination periods

There are four broad categories of issues potentially associated with the alignment of determination periods:

- **Methodological consistency.** There can be issues when agencies of a similar nature have determinations at different times. For example, after a request from Hunter Water, we aligned its determination period with Sydney Water's because it allows for consistent regulatory decisions (eg, WACCs) for similar water utilities and allows better comparison of performance.
- **Organisational relationships / interactions.** Sydney Water purchases its bulk water from both WaterNSW and SDP. Therefore, Sydney Water's bulk water costs are determined by WaterNSW's and SDP's prices. If these utilities' determination periods are not aligned, we may need to use more complicated approaches to ensure Sydney Water's prices recover its bulk water costs, such as cost pass through mechanisms.
- **Common customer base.** Rural water customers in NSW receive services and common bills from two organisations: WaterNSW (Rural) and the DPI Water (formerly the NSW Office of Water). Customers may be confused about the distinct roles of each and the appropriate determination for a particular issue. Aligning pricing determinations may improve transparency and customers' understanding of prices.
- **Internal organisation and cost allocation issues.** There can be issues arising from an organisation's internal requirements. For example, as Chapter 2 discussed, for the coming years at least, we will determine prices for WaterNSW's services in the GS area and in rural areas separately, and for different periods. Aligning the determination periods (or making a combined determination) may reduce regulatory costs and have other benefits.

IPART seeks comments on the following

1 What should be the length of this determination period?

2 Is alignment of determination periods across water utilities important? If so, which determinations should be aligned, and why?

3.2 Approach for calculating notional revenue requirement

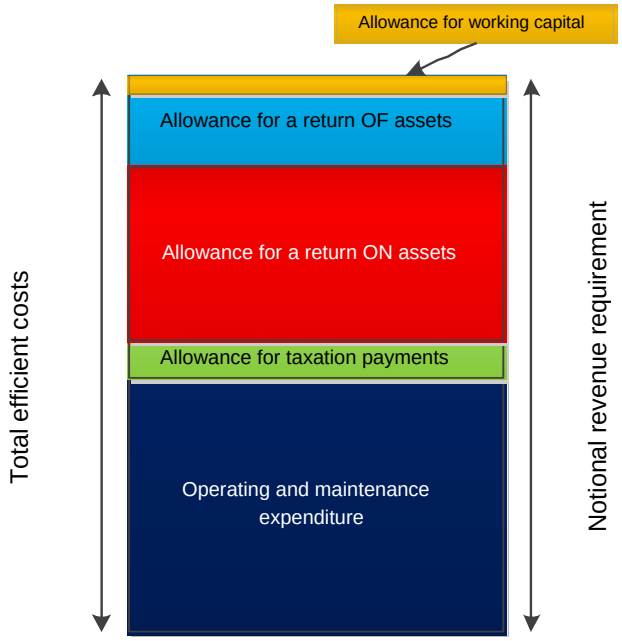
The notional revenue requirement represents our view of the total efficient costs of providing WaterNSW's regulated services to its customers in each year of the determination period. In general, we set prices to recover this amount of revenue.

For previous reviews, we have used a 'building block' method to calculate WaterNSW's revenue requirement. This method involves determining, for each year of the determination period, an allowance for:

- **Operating expenditure,** which represents our estimate of the efficient level of WaterNSW's forecast operating, maintenance and administration costs.
- A **return on the assets** WaterNSW uses to provide its services. This amount represents our assessment of the opportunity cost of the capital invested in WaterNSW, and ensures that it can continue to make efficient capital investments in the future. To calculate this amount, we need to decide on the efficient and prudent levels of WaterNSW's past and forecast capital expenditure, the value of WaterNSW's regulatory asset base (RAB), and the appropriate weighted average cost of capital (WACC).
- A **return of those assets (regulatory depreciation).** This allowance recognises that through the provision of services to customers, a utility's capital infrastructure will wear out over time, and therefore revenue is required to recover the cost of maintaining the RAB. To calculate this allowance, we need to decide on the appropriate asset lives and depreciation method.
- An **allowance for meeting tax obligations**. We use a real post-tax WACC to calculate the allowances for a return on assets and regulatory depreciation, and calculate the allowance for tax as a separate cost block. We consider this method accurately estimates the tax liability for a comparable commercial business.
- An **allowance for working capital**, which represents the holding cost of net current assets.

The sum of these allowances is the notional revenue requirement (see Figure 3.1). Note the approach also takes into account deductions for non-regulated income which is derived from activities that are not monopoly services utilising assets in the RAB. We typically subtract 50% of this income from the notional revenue requirement.

Figure 3.1 Building block approach



Once we have calculated WaterNSW's notional revenue requirement, we decide on the approach we should use to convert this amount into prices. This involves deciding on the **target revenue** for each year – that is, the actual revenue we will expect WaterNSW to generate from prices and charges for that year. To make this decision, we consider a range of factors, including:

- the implications of the notional revenue requirement on price levels, and the rate and way in which they would change, and
- the impact of this on WaterNSW and its customers.

3.2.1 WaterNSW's proposal on revenue requirement

WaterNSW proposed a total revenue requirement of $815.8 million over the four years from 2016-17 to 2019-2020.

Table 3.1 shows WaterNSW's proposed notional revenue requirement for the Greater Sydney area.

Table 3.1 WaterNSW's proposed notional revenue ($2015-16 million)

	2016-17	2017-18	2018-19	2019-20
Operating expenditure	102.7	101.0	101.4	100.6
Deduction for unregulated income	-1.8	-1.4	-1.8	-1.0
Depreciation	25.4	26.3	27.1	28.4
Return on assets	69.9	72.2	74.6	78.3
Return on working capital	0.5	0.4	0.5	0.3
Allowance for tax	3.0	3.0	3.0	3.1
Notional revenue requirement	**199.7**	**201.5**	**204.9**	**209.7**

Note: WaterNSW's proposed notional revenue requirement is its target revenue.
Source: WaterNSW pricing proposal to IPART, June 2015, p 47.

WaterNSW's proposed notional revenue requirement is 4% lower than the target revenue of $848.3 million used to make the 2012 Determination.[29] This is a result of a lower WACC used to calculate the allowance for a return on assets, and lower forecast operating costs due to efficiency gains. However, the impact of these factors is offset to some extent by a significant increase in WaterNSW's forecast capital expenditure, which puts upward pressure on the allowances for a return on assets and regulatory depreciation.

WaterNSW proposed to deduct $6 million of unregulated revenue from its total notional revenue requirement over the 4-year period.[30] This unregulated revenue is derived from activities such as hiring conference centres.

3.2.2 IPART's response on revenue requirement

We will review WaterNSW's proposed revenue requirement by examining the building block allowances, and the key elements of these allowances – including the efficient level of forecast operating expenditure, the prudent and efficient levels of WaterNSW's past and forecast capital expenditure, the value of WaterNSW's RAB, the appropriate WACC, the appropriate asset lives and the depreciation method.

In addition to our own investigations, we will engage consultants to review the efficiency of WaterNSW's forecast operating expenditure and the prudence and efficiency of its past and forecast capital expenditure. We will also consider stakeholder comments on the proposed revenue requirement.

Taking account of all of the above, we will form our own view of the efficient or prudent value for each allowance and key element, and use these values to determine the notional revenue requirement. The issues we consider are discussed in the Chapters 4 to 6.

29 WaterNSW pricing proposal to IPART, June 2015, p 30. The revenue requirement value has not been adjusted for the carbon tax rebate.
30 WaterNSW pricing proposal to IPART, June 2015, p 47.

Once we have determined the notional revenue requirement, we will set the target revenue taking into consideration the impact on customers and the utility.

4 Allowance for operating expenditure

As Chapter 3 discussed, the allowance for operating expenditure within the notional revenue requirement reflects our view of the efficient level of operating costs that WaterNSW will incur in providing its services to the Greater Sydney area over the determination period. This expenditure includes, amongst other cost items, the costs of employees, contractors, energy, administration, property and licence fees.

This chapter outlines WaterNSW's past operating expenditure over the 2012 determination period, and then discusses WaterNSW's proposed operating expenditure for the 2016 determination period and our preliminary response to this proposal.

4.1 WaterNSW's past operating expenditure in 2012 period

WaterNSW indicated that its past operating expenditure for the GS area over the 2012 determination period (2012-13 to 2015-16) is expected to be around $10 million or 2.5% below the operating expenditure allowance included in the 2012 Determination. Table 4.1 compares WaterNSW's actual operating expenditure with the allowed operating expenditure in each year of the 2012 Determination period.

Table 4.1 WaterNSW past operating expenditure compared with IPART determined over 2012 determination period ($2015-16 million)

	2012-13	2013-14	2014-15[a]	2015-16[a]	Total
Determined	100.6	101.8	102.1	102.2	406.7
Actual	93.4	98.5	101.1	103.6	396.5
Difference	-7.2	-3.4	-1.0	1.4	-10.2
Difference	-7.2%	-3.2%	-1.0%	1.4%	-2.5%

a 2014-15 and 2015-16 figures are forecasts.

Note: Totals may not add due to rounding.

Source: WaterNSW pricing proposal to IPART, June 2015, p 30.

According to WaterNSW, the key drivers of this underspend were:[31]

- no requirement to pump water from the Shoalhaven (-$1.9 million)
- savings in energy costs related to routine pumping (-$0.9 million)
- the repeal of the carbon tax (-$5.6 million)
- lower than forecast need for bulk water purchases from the Fish River Scheme (-$0.4 million), and
- savings in insurance premiums (-$0.4 million).

These lower than expected operating costs were partly offset by higher than forecast costs related to:

- managing incidents (+$1.2 million), and
- Warragamba Dam risk and reliability investigation (+1.5 million).

The net outcome was a total underspend of $10.2 million across the four years.

4.2 WaterNSW's proposal for operating expenditure in 2016 period

WaterNSW proposed operating expenditure of $405.7 million over the 4-year period to 2019-20. This proposed expenditure is:

- about 52% of its total proposed expenditure over this period, and about 50% of its proposed revenue requirement for the period
- $9.2 million (or 2.3%) higher than its past operating expenditure over the 2012 determination period, and
- $1.0 million (or 0.2%) lower than the allowance for operating expenditure included in the 2012 Determination ($406.7 million).

Table 4.2 shows WaterNSW's proposed operating expenditure for each year of the 2016 determination period, and the change compared to the previous year.

Table 4.2 WaterNSW's proposed operating expenditure for the 2016 determination period ($2015-16 million)

	2015-16 (current)	2016-17	2017-18	2018-19	2019-20
Proposed expenditure	103.6	102.7	101.0	101.4	100.6
Change from previous year		-0.9	-1.7	0.4	-0.8
Change from previous year		-0.9%	-1.7%	0.4%	-0.8%

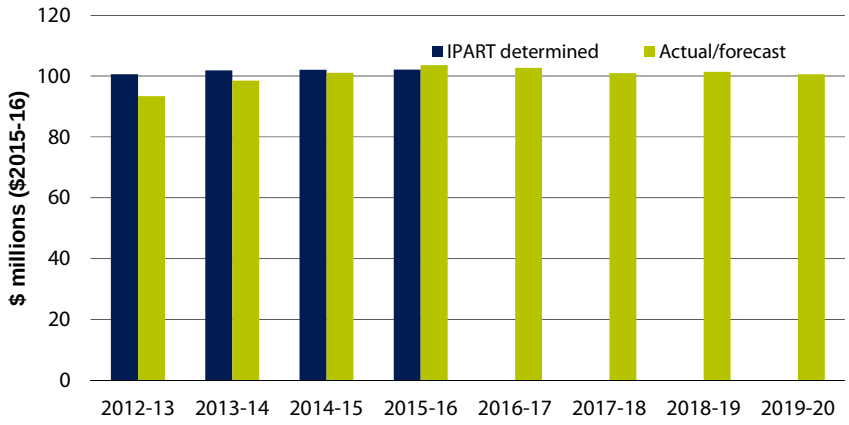
Note: 2015-16 is the final year of the 2012 determination period. Expenditure shown is WaterNSW's forecast for this year.

Source: WaterNSW pricing proposal to IPART, June 2015, pp 30 & 50.

[31] WaterNSW pricing proposal to IPART, June 2015, p 31.

Figure 4.1 compares WaterNSW's proposed operating expenditure for the 2016 period with its past expenditure and IPART's determined expenditure for the 2012 period.

Figure 4.1 WaterNSW's proposed operating expenditure compared with past and IPART determined expenditure in 2012 period



Data source: WaterNSW pricing proposal to IPART, June 2015, pp 30 & 50.

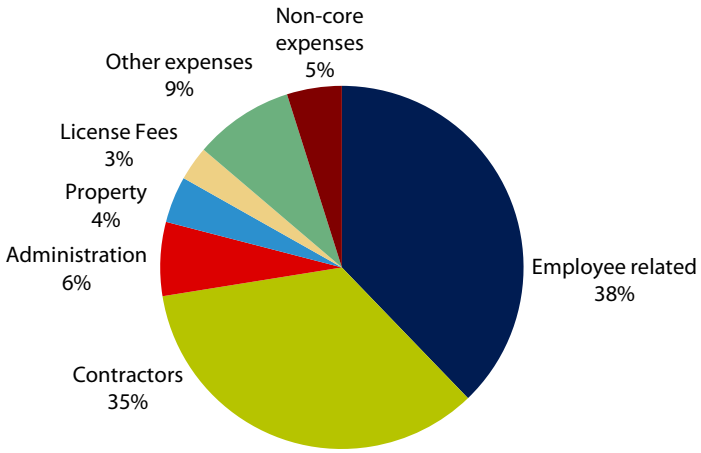
4.2.1 Drivers of proposed operating expenditure over 2016 period

WaterNSW classifies its operating expenditure as 'core' and 'non-core':

- Core expenditure is incurred in delivering its water services in the GS area, and includes its day-to-day operating, maintenance and administrative costs.
- Non-core expenditure may be incurred, depending on whether pumping from the Shoalhaven River and/or bulk water purchases and pumping from the Fish River Scheme are required during the period. It is treated as an expected cost in the operating expenditure allowance.

As Figure 4.2 shows, non-core expenditure represents a small proportion of WaterNSW's proposed operating expenditure. Core expenditure makes up 95% of the total proposed operating expenditure for the 2016 determination period. The most substantial cost items are employee-related costs (ie, wages and salaries for its direct labour force) and contractor and consultant costs.

Figure 4.2 Components of WaterNSW's proposed operating expenditure over 2016 determination period



Note: Other expenses include insurance (2.4%), energy (1.9%), materials (1.3%), grants (0.9%) and other expenses (2.8%). Non-core expenses include bulk water costs – Fish River $3 million per annum (or 3%) and Shoalhaven pumping allowance $2.1 million per annum (or 2.1%),

Data source: WaterNSW pricing proposal to IPART, June 2015, p 51.

4.2.2 Efficiencies factored into proposed operating expenditure

WaterNSW indicated that in developing its proposed operating expenditure, it factored in estimated efficiency gains of $13.2 million over the proposed determination period. WaterNSW has not stated in which operational areas these efficiency gains will be made. By 2019-20, WaterNSW expects its operating expenditure to be around 3% lower in real terms than in 2015-16.[32]

4.2.3 Proposed treatment of non-core operating expenditure over the 2016 period

As noted above, WaterNSW may incur non-core operating expenditure depending on whether pumping from the Shoalhaven River and/or bulk water purchases from the Fish River Scheme are required. Under the 2010 MWP, WaterNSW is required to start pumping from the Shoalhaven River when Sydney's dam levels fall to 75% and continue until they rise above 80%.

In the 2012 Determination, we determined the amount for non-core expenditure included in the allowance for operating expenditure based on:

- the expected efficient cost of pumping water from the Shoalhaven River and pumping and purchasing bulk water from the Fish River Scheme, and

[32] WaterNSW pricing proposal to IPART, June 2015, p 51.

- the probability that this pumping and purchasing of bulk water would be required over the determination period.

WaterNSW proposed that non-core operating expenditure be treated in the same way for the 2016 determination period. In its proposed operating expenditure, it included non-core expenditure of around:

- $2.1 million per year for pumping from the Shoalhaven River. This is based on current modelling and a probability that the pumping will be required for around 30% of the period.[33] WaterNSW indicated that it will provide us with an updated estimate of the likelihood of pumping before we make our final determination.[34]
- $3 million per year for pumping and purchases of bulk water from the Fish River scheme. This is based on the estimate of the water required to meet demand in most years within the Blue Mountains raw water supply system. A cost allocation of 90% of available allocation meets demand in most years, in the event a full drought occurs, up to 20% additional supply may be purchased.[35]

Information on the operating rules that determine the level of bulk water purchased from the Fish River Scheme is not outlined in the WaterNSW proposal.

4.2.4 Proposed approach to cost allocation of shared operating expenditure

WaterNSW was formed from the merger of the SCA and State Water. As SCA and State Water were two regulated entities, WaterNSW is required to provide cost build-ups for two separate pricing determinations. For each determination, WaterNSW needs a clear and consistent method for allocating shared or common costs (eg, corporate costs) between its Greater Sydney area (formerly SCA) customers and its Rural (formerly State Water) customers.

WaterNSW has apportioned operating costs between Greater Sydney and Rural customers by dividing them into distinct cost categories:

- **Direct costs** can be directly attributable to a specific customer base and are allocated to that customer base (eg, costs related directly to protecting Greater Sydney's drinking water catchment are allocated directly to the GS area customer base).
- **Overheads incurred only as part of providing services to a specific customer base** are allocated to that customer base only (eg, any management and administration costs incurred by the Greater Sydney Catchment Operations team will be allocated directly to the GS customer base).

33 WaterNSW email to IPART, 23 July 2015.
34 WaterNSW pricing proposal to IPART, June 2015, p 50.
35 WaterNSW email to IPART, 27 August 2015.

- **Corporate-wide overheads** – costs associated with corporate wide business functions are allocated to each region based on its portion of total attributable operating expenditure related salaries and wages. This means that only a portion of WaterNSW's costs associated with business units such as Corporate Finance are included in its expenditure proposal for this review of its GS prices.[36]

4.3 IPART's response on operating expenditure

We have not formed a preliminary view on WaterNSW's proposed operating expenditure. To make our draft decision on its proposal, we will review the proposal and engage a consultant to review the efficiency of the proposed expenditure. This will involve examining whether this expenditure represents the best way of meeting the community's need for the relevant services.[37]

We will also consider the responses of WaterNSW and other stakeholders to this Issues Paper and to our consultant's draft report. In reviewing the proposal, we will particularly focus on the potential for efficiency gains over the 2016 determination period, given that:

- operating expenditure makes up approximately half of WaterNSW's proposed revenue requirement
- part of the reason for forming WaterNSW by merging SCA and State Water was to reduce overheads and enhance efficiency, and
- WaterNSW has proposed an Efficiency Benefit Sharing Scheme (EBSS) to increase and equalise its financial reward, and therefore its incentives, for achieving cost savings during the determination period.

As discussed above, WaterNSW indicated that its proposed operating expenditure incorporates $13.2 million of operating efficiencies over the 2016 determination period. This represents an average annual saving of $3.3 million.[38] At this stage, WaterNSW has not detailed how these efficiencies have been calculated, how they will be achieved, and in which operational areas they will be made. We will request more detail on WaterNSW's forecast operating expenditure efficiencies over the 2016 determination period in our expenditure review.

36 WaterNSW pricing proposal to IPART, June 2015, p 51.
37 IPART, *Regulatory tests of past and forecast expenditure – Final Report*, December 2010, p 3.
38 WaterNSW pricing proposal to IPART, June 2015, p 51.

Non-core operating expenditure

In relation to WaterNSW's proposed treatment of its non-core operating expenditure, we will consider whether to:

- continue to treat Fish River scheme purchase costs and Shoalhaven transfer costs as expected costs included in the allowance for operating expenditure, as WaterNSW proposed, or
- establish cost pass through mechanisms for this non-core expenditure (see Chapter 9).

The use of a cost pass through mechanism would involve determining WaterNSW's revenue requirement and its standard bulk water charges on the basis that there will be no pumping from the Shoalhaven and no Fish River bulk water purchases over the 2016 determination period. We would then set a price for this pumping so that WaterNSW can charge Sydney Water and potentially its Council customers on a 'fee for service' basis (ie, $ per ML added to the standard volumetric charge) if and when it occurs.

The use of a pass through mechanism for the costs of water sourced from the Shoalhaven and/or Fish River would have the benefits of:

- recognising the uncertainty associated with forecasting these costs, and ensure that WaterNSW does not under or over-recover these costs, and
- sending a signal to WaterNSW's bulk water customers about the costs of increased water scarcity (eg, under current operating rules, Shoalhaven pumping commences when Sydney's dam levels fall to 75%).

At a minimum, the use of a cost pass through mechanism requires that there is a clear trigger event (to activate the cost pass through), which can be clearly defined; and that the resulting efficient cost associated with the trigger event can be fully assessed and specified in the price determination (see Box 9.1 in Chapter 9).

In assessing WaterNSW's forecasts operating costs and the merits of cost pass through mechanisms, we will review its methodology for forecasting non-core operating expenditure. We will also request further information on the operating rules that are used to determine bulk water purchases and transfers from the Fish River scheme.

Cost allocation

When considering WaterNSW's approach to cost allocation of shared operating expenditure, we have been unable to determine the proportion of WaterNSW's operating costs that are direct, specific or corporate-wide. WaterNSW has only provided a breakdown of its operating costs by resource in its submission.

The allocation of shared costs is a new and potentially significant element of the 2016 pricing review. We will examine the cost allocation principles and their application during our expenditure review.

IPART seeks comments on the following

3 Are WaterNSW's proposed operating costs for the 2016 determination period efficient, taking into account the drivers of this expenditure?

4 What scope is there for WaterNSW to achieve efficiency gains over the 2016 determination period?

5 Is the approach to allocating shared operating expenses between Greater Sydney area customers and rural operations customers reasonable?

6 How should we treat costs of Shoalhaven transfers and bulk water supply from the Fish River Supply Scheme?

5 Prudent and efficient capital expenditure

Under the building block method, there is no explicit allowance for capital expenditure in the notional revenue requirement. Instead, capital expenditure is added to the RAB and recovered through the allowances for a return on assets and regulatory depreciation (discussed in Chapter 6). To decide how much capital expenditure is added to the RAB, we review WaterNSW's proposals and apply:

- a prudence test to its actual capital expenditure over the 2012 determination period (past capital expenditure), and
- an efficiency test to its 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 utility, acting prudently, would be expected to make. The prudence test assesses both:

- the prudence of how the decision was made to invest, 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.

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

We incorporate the prudent and efficient capital expenditure into the value of the RAB, and then use this value in calculating the allowances for a return on assets and regulatory depreciation.

This chapter outlines WaterNSW's proposals on past and forecast capital expenditure and our preliminary response to these proposals.

5.1 WaterNSW's proposal on past capital expenditure

WaterNSW indicated that its actual capital expenditure for the GS area over the 2012 determination period is expected to be $22.2 million (or 15%) lower than allowed for in the 2012 Determination (Table 5.1).

Table 5.1 WaterNSW past capital expenditure compared with IPART determined over the 2012 determination period ($2015-16 million)

	2012-13	2013-14	2014-15	2015-16[a]	Total
Determined	35.2	37.5	36.3	40.9	149.9
Actual	19.1	33.9	16.5	58.1	127.7
Difference	-16.2	-3.6	-19.8	17.3	-22.2
Difference	-45.7%	-9.6%	-54.5%	42.1%	-14.9%

a 2015-16 figures are forecasts.

Note: Totals may not add due to rounding.

Source: WaterNSW pricing proposal to IPART, June 2015, p 32.

WaterNSW indicated that much of this capital underspend is due to the deferral of Warragamba Environmental Flows construction works. In 2012, it expected that a decision on the Warragamba Dam environmental flows regime would be part of the next version of the MWP and that construction would start in 2015-16. However, the new MWP is yet to be released, and WaterNSW now does not expect to spend the allowance for this project ($17.7 million) in the current period.[39]

WaterNSW stated that when the Warragamba Dam Environmental Flows allowance is excluded, its total capital underspend in the 2012 determination period is only $4.4 million.[40] We acknowledge that that the deferral of the project accounts for majority of the under expenditure over the 2012 determination period, however, WaterNSW's year-on-year expenditure profile differs markedly from the allowed expenditure profile (see Table 5.1).

WaterNSW indicated that some of the major capital projects it delivered or commenced in this period were:

- Upper Canal refurbishment
- Prospect Reservoir upgrade
- Wingecarribee Reservoir upgrade, and
- Burrawang Pumping Station and Metropolitan Dams electrical system upgrades.

39 WaterNSW pricing proposal to IPART, June 2015, p 32.
40 WaterNSW pricing proposal to IPART, June 2015, p 32.

5.1.1 Output measures

As part of our determination process, we specify outputs against which to measure the delivery of the proposed capital expenditure program. For the 2012 determination period we specified a set of nine output measures for WaterNSW.

In its submission, WaterNSW reports that of the nine measures set for the 2012 determination period, two measures are on hold – pending further information:

- Warragamba Dam Reliability Upgrade, and
- Shoalhaven Transfers Works.[41]

The capital expenditure relating to the Warragamba Reliability upgrade project is to carry out works to address dam safety issues identified by the Warragamba Dam Risk and Reliability Investigations. The works have been delayed due to a longer than expected geological investigation of the Lapstone fault complex.

The 2010 MWP identified the construction of a water transfer tunnel from Burrawang to Avon Dam as the next augmentation of Greater Sydney's water supply system (Shoalhaven transfer upgrade). The development of the business case is currently on hold pending the finalisation of the next MWP, which is expected to be finalised in March 2016.

WaterNSW reports that the remaining seven projects have either been completed on time or are on track to be completed on time.

In its submission, WaterNSW does not propose what output measures it considers should be implemented for its upcoming determination.

5.1.2 IPART's response on output measures

We propose to maintain the use of output measures as a tool to assess prudent expenditure. Therefore, we plan to establish a set of output measures that reflect the nature of WaterNSW's expenditure program, and will include this list of measures in the draft determination report.

We will require WaterNSW to provide annual progress reports against the output measures throughout the upcoming period.

IPART seeks comments on the following

7 What output measures should we establish for WaterNSW for the 2016 determination period?

[41] WaterNSW pricing proposal to IPART, June 2015, p 23.

5.2 WaterNSW's proposed capital expenditure

WaterNSW has proposed capital expenditure of $373.1 million over the 2016 determination period. This proposed expenditure is:

- $245.4 million (or 192%) higher than its actual capital expenditure over the 2012 determination period ($127.7 million)[42]
- $223.2 million (or 149%) higher than the capital expenditure allowed for in the 2012 Determination ($149.9 million).

Table 5.2 shows WaterNSW's proposed capital expenditure for the 2016 determination period by high-level driver.

Table 5.2 WaterNSW's forecast capital expenditure for the 2016 determination period ($2015-16 million)

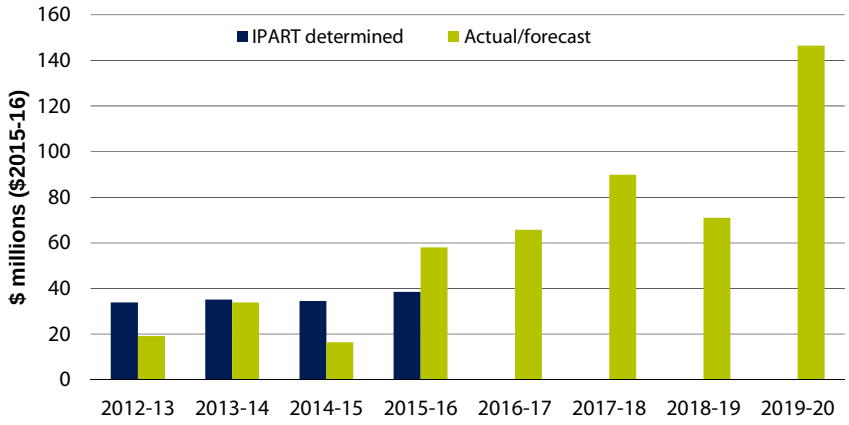
Driver	2016-17	2017-18	2018-19	2019-20	Total
Business efficiency	13.4	7.4	5.6	7.5	33.9
Government programs	6.5	7.7	16.5	103.4	134.1
Mandatory standards	32.3	42.8	19.1	8.4	102.6
Discretionary standards	13.5	32.0	29.8	27.2	102.5
Total	**65.7**	**89.9**	**71.0**	**146.5**	**373.1**

Source: WaterNSW pricing proposal to IPART, June 2015, p 54.

Figure 5.1 compares the actual and proposed capital expenditure of WaterNSW against the 2012 efficient allowance determined by IPART. As part of our expenditure review we will assess the differences between WaterNSW's actual and allowed expenditure for the 2012 determination period. We will also assess WaterNSW's proposed expenditure program for the 2016 determination period as part of our review of capital expenditure. This will include consideration of the proposed timing of capital expenditure on the Shoalhaven Transfers project.

42 This figure includes forecasts for 2014-15 and 2015-16 years.

Figure 5.1 WaterNSW's forecast capital expenditure compared with its actual and IPART determined for the 2012 period



Data source: WaterNSW's pricing proposal, p 32 and IPART calculations.

WaterNSW indicated that in the early part of the 2016 determination period, its proposed capital works focus was on asset renewals. However, over the whole period, the proposed works are largely a result of the need to service growth.

Major proposed capital projects for the 2016 determination period include:

- Upper Canal Refurbishment – Phase 2
- Catchment Assets renewals – eg, picnic ground facilities, signage and firefighting equipment, and
- Water security project – early works for the Shoalhaven Transfers project.

The early works of the Shoalhaven Transfers project account for 35% of WaterNSW's proposed capital program. This project will augment the pipeline that moves water between the Burrawang and Avon Reservoirs to secure Greater Sydney's next tranche of water supply.[43] WaterNSW has brought forward the start of the project by two years (to 2016-17) compared to its previous capital investment plan.[44] It expects that spending on the project represents about 54% of its 10-year capital expenditure program (2015-25).

WaterNSW also indicated that in response to the merger between SCA and State Water, it has developed a methodology for apportioning shared capital costs (eg, corporate IT system costs) between its GS operations and the rest of its operations in NSW.

43 WaterNSW pricing proposal, June 2015, p 54.
44 WaterNSW pricing proposal, June 2015, p 55.

5.2.1 Proposed approach to cost allocation of shared capital expenditure

WaterNSW is required to provide cost build-ups for two separate pricing determinations. For each determination, WaterNSW needs a clear and consistent method for allocating shared costs between its Greater Sydney area customers and its rural customers.

WaterNSW will have corporate capital expenditure and that will require a cost allocation approach.

WaterNSW has two distinct RAB's representing the accumulation of capital for servicing Greater Sydney and rural customers. Therefore the RAB (and hence capital costs) is already allocated between service areas. These initial allocations will need to be rolled forward over time to incorporate future efficient capital expenditure for each 'object' or service area.[45]

WaterNSW allocates capital expenditure on a project basis. Projects that can be directly attributed to a customer base have been allocated to those customers.

In its proposal, WaterNSW has allocated corporate-wide capital expenditure (such as corporate information technology projects) based on the proportional value of the RAB. Using this method WaterNSW has allocated 67% of the cost of corporate wide capital projects to the Greater Sydney customer base.[46]

5.3 IPART's response on capital expenditure

We have not formed a preliminary view on WaterNSW's proposed capital expenditure. To make our draft decision, we will review the proposal and engage an expert consultant to conduct:

- a strategic review of WaterNSW's long-term investment plans and asset management systems and practices, and
- a detailed review of the prudence of WaterNSW's past capital expenditure and the efficiency of its forecast expenditure.

We will also consider the responses of WaterNSW and other stakeholders to this Issues Paper and our consultant's draft report.

In reviewing the proposals, we will consider the reasons WaterNSW has put forward to explain why its actual capital expenditure in the 2012 determination period was lower than we allowed for in making the 2012 Determination. In particular, we will review the over expenditure (42.1%) in 2015-16 compared to the allowance in the 2012 Determination despite the deferral of the Warragamba Dam Environmental Flows project.

---

45 IPART, *Draft Cost Allocation Guide – Water Industry Competition Act 2006*, 2008, p 13.
46 WaterNSW pricing proposal, June 2015, p 56.

We will consider the reasons it has put forward to justify its forecast capital expenditure for the 2016 determination period. We will consider not only the costs, but also the timing of major projects and reasonableness of lead times allowed to commence construction. In doing so, we will give consideration to the historical year-on-year expenditure profile.

We will also examine major proposed capital projects such as the works for the Shoalhaven Transfer project. Ideally, our assessment would consider this project (including its timing and scale) with reference to the next version of the MWP. However, this updated plan is unlikely to be available in time.

The 2010 MWP suggests that infrastructure for transferring water from the Shoalhaven system to Sydney and the Upper Metropolitan Dam system/Illawarra would be constructed to provide more water and replace the current run-of-river process by 2025.[47] WaterNSW indicated that commencement would be subject to factors such as future climate predictions and population growth and demand.

We will only include in the RAB capital expenditure that we deem to be prudent and efficient.

When considering WaterNSW's approach to cost allocation of shared capital expenditure, it is unclear why WaterNSW chose to use the RAB values as an approach for assigning corporate capital costs. In addition, WaterNSW has not explicitly provided the value of corporate wide capital expenditure in Greater Sydney's RAB. We will examine this issue in our review of proposed capital expenditure.

IPART seeks comments on the following

8 Was WaterNSW's capital expenditure over the 2012 determination period prudent, taking into account drivers of this expenditure and service outcomes achieved?

9 Is WaterNSW's forecast capital expenditure program over the 2016 determination period efficient, taking into account expenditure drivers, scope for efficiency gains and proposed water management outcomes?

10 Is WaterNSW's proposed approach to allocating shared capital expenses between Greater Sydney area customers and its rural operations customers reasonable?

[47] The Centre for International Economics expects the project to cost around $500 million (CIE, *Cost Effectiveness Analysis – 2010 Sydney Metropolitan Water Plan*, prepared by NSW Office of Water, April 2010, p 66).

6 Allowance for return on assets, regulatory depreciation and tax liabilities

To calculate the allowances for a return on assets and regulatory depreciation in the revenue requirement, we need to determine three key inputs:

- the value of WaterNSW's regulatory asset base (RAB), which represents the economic value of the assets used to deliver the monopoly services
- the appropriate asset lives and depreciation method to apply to WaterNSW's RAB, and
- the appropriate rate of return (eg, the weighted average cost of capital) on WaterNSW's RAB.

The sections below discuss WaterNSW's proposals on these three inputs and its proposed tax allowance, and our preliminary responses to these proposals.

6.1 Value of the RAB

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 2012 period (the opening RAB) and incorporate WaterNSW's prudent and efficient actual capital expenditure over that period (discussed in Chapter 5), and make adjustments to account for other changes to the RAB over the period (eg, asset disposals, capital contributions and regulatory depreciation). This determines the opening RAB for the 2016 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 other forecast changes to the RAB (eg, asset disposals, capital contributions and regulatory depreciation). This gives the forecast RAB for each year of the 2016 period.

6.1.1 WaterNSW's proposal on the value of the RAB

Table 6.1 shows WaterNSW's proposed opening RAB for the 2016 determination period and the adjustments WaterNSW made to derive that value. WaterNSW estimates that the value of the RAB has increased by $135.3 million or 9% over the 2012 determination in nominal terms.

Table 6.1 WaterNSW calculated RAB for the 2012 determination ($million, nominal)

	2012-13	2013-14	2014-15	2015-16 (current)
Opening RAB for 2012 period	**1,393.8**	**1,408.1**	**1,438.2**	**1,463.0**
Plus: Capital expenditure	17.7	32.3	16.1	58.1
Less: Asset disposals	(1.7)	(2.9)	(1.7)	(2.0)
Less: Regulatory depreciation	(23.9)	(24.8)	(26.1)	(27.3)
Plus: Indexation[a]	22.1	25.6	36.1	37.3
Opening RAB for 2016 period	**1,408.1**	**1,438.2**	**1,463.0**	**1,529.1**

[a] Indexation is applied to the RAB when rolling it forward to 2015-16 so that its value is maintained in real terms. When rolling the RAB forward over the 2016 determination period (Table 6.2 below) to set new prices, we do not incorporate indexation. This is because we will set prices in real terms ($2015-16) and then provide for inflation by indexing prices according to changes in the consumer price index, throughout the determination period.

Source: WaterNSW supplementary information, 21 July 2015.

Table 6.2 shows WaterNSW's proposed RAB and adjustments for each year of the 2016 determination period. WaterNSW proposes to increase the value of the RAB by $448 million or 29% over the 2016 determination period in nominal terms.

Table 6.2 WaterNSW proposed RAB for the 2016 determination ($ nominal, million)

	2015-16 (current)	2016-17	2017-18	2018-19	2019-20
Opening RAB	**1,463.0**	**1,529.1**	**1,607.4**	**1,713.3**	**1,802.1**
Plus: Capital expenditure	58.1	67.3	94.4	76.5	161.7
Less: Asset disposals	(2.0)	(2.0)	2.3	2.3	2.4
Less: Regulatory depreciation	(27.3)	(26.1)	(27.6)	(29.2)	(31.4)
Plus: indexation	37.3	39.0	41.3	43.8	47.0
Closing RAB	**1,529.1**	**1,607.4**	**1,713.3**	**1,802.1**	**1,977.0**

Note: Figures may not sum due to rounding.

Source: WaterNSW supplementary information, 21 July 2015.

Further detail on WaterNSW's proposal on the adjustment of the RAB for past capital expenditure is discussed in Chapter 5. Its proposed adjustment for regulatory depreciation (ie, the allowance for regulatory depreciation) is discussed in section 6.4. Its other proposed adjustments to the RAB and our preliminary response are discussed below.

6.1.2 IPART's response on the value of the RAB

Table 6.3 shows our preliminary calculation of the opening RAB for the 2012 determination period and the adjustments we made to derive that value. The differences between our calculations of the RAB and that provided by WaterNSW are caused by differences in indexation in 2011-12 and the first three years of the 2012 determination period. We estimate the starting RAB for the 2016 determination to be about $20 million higher than WaterNSW's proposal.

Table 6.3 IPART calculated RAB for the 2012 determination ($ nominal, million)

	2012-13	2013-14	2014-15	2015-16 (current)
Opening RAB for 2012 period	**1,387.4**	**1,413.0**	**1,460.1**	**1,483.5**
Plus: Capital expenditure	17.7	32.3	16.1	58.1
Less: Asset disposals	(1.7)	(2.9)	(1.7)	(2.0)
Less: Regulatory depreciation	(23.9)	(25.1)	(26.3)	(27.5)
Plus: Indexation[a]	33.5	42.8	35.2	37.8
Opening RAB for 2016 period	**1,413.0**	**1,460.1**	**1,483.5**	**1,549.9**

[a] Indexation is applied to the RAB when rolling forward to 2015-16 so that its value is maintained in real terms. When rolling the RAB forward over the 2016 determination period (Table 6.4) to set new prices, we do not incorporate indexation. This is because we will set prices in real terms ($2015-16) and then provide for inflation by indexing prices with changes in the consumer price index throughout the determination period.

Source: IPART calculations using WaterNSW Annual Information Return 2015.

Table 6.4 shows our preliminary calculation of WaterNSW's RAB using its proposed capital expenditure and asset disposals for each year of the 2016 determination period. Our calculations differ from that of WaterNSW due to higher regulatory depreciation and a higher starting RAB (see above). We estimate that the RAB will increase by $3.5 million less or -0.8% over the 2016 determination period compared with WaterNSW's proposal. Based on our preliminary calculations, we estimate that this results in prices that are between 1% to 2% higher than those in WaterNSW's proposal.

Table 6.4 IPART preliminary RAB for the 2016 determination ($ nominal, million)

	2015-16 (current)	2016-17	2017-18	2018-19	2019-20
Opening RAB	**1,483.5**	**1,549.9**	**1,628.1**	**1,733.4**	**1,821.0**
Plus: Capital expenditure	58.1	67.3	94.4	76.5	161.7
Less: Asset disposals	(2.0)	(2.0)	(2.3)	(2.3)	(2.4)
Less: Regulatory depreciation	(27.5)	(26.7)	(28.7)	(30.8)	(33.6)
Plus: indexation	37.8	39.6	41.9	44.3	47.5
Closing RAB	**1,549.9**	**1,628.1**	**1,733.4**	**1,821.0**	**1,994.3**

Note: Figures may not sum due to rounding.

Source: IPART calculations.

To determine allowances for a return on assets and regulatory depreciation, we must establish the value of WaterNSW's RAB in each year of the upcoming determination period.

In order to establish the value of WaterNSW's RAB for the 2016 Determination, we will review past capital expenditure taking into account the recommendations of our capital and operating expenditure consultants. We will then add capital expenditure that is deemed prudent and efficient to calculate the starting RAB.

6.2 Adjustments to the RAB

6.2.1 Cash capital contributions and grants

Cash capital contributions are funds paid to WaterNSW. These contributions generally include government grants, such as payments for new drought proofing infrastructure.

In establishing the value of the RAB, we deduct the third party cash capital contributions. This is so customers do not pay for a return on assets or regulatory depreciation for capital expenditure that WaterNSW is not funding.

WaterNSW's proposed RAB for the 2016-20 Determination includes zero cash contributions or grants.

6.2.2 WaterNSW's proposal on asset disposals

The value of any regulatory assets WaterNSW proposes to sell or dispose of during the 2016 determination period is deducted from the RAB. This ensures customers are not charged a return on assets or regulatory depreciation for assets that no longer provide them with any benefit in receiving regulated services.

WaterNSW forecasts asset disposals of around $2 million per annum for 2016-17 to 2019-20. In its calculation of the opening RAB, WaterNSW deducted asset disposals.[48]

[48] WaterNSW, *Annual Information Return*, 2014-15.

6.2.3 IPART's response on asset disposals

IPART has recently considered how asset sales, or more broadly asset disposals, should be treated in pricing reviews. In our view, the primary issues we need to consider in relation to asset disposals are:

- how and when to remove an asset from the RAB, given that it is no longer used to provide regulated services to customers, and
- whether the business should be provided an allowance in the revenue requirement to pay any capital gains tax resulting from the sale of an asset subject to capital gains tax.

From first principles, we consider the asset's identifiable **regulatory value** should be removed from the RAB. This is the value of the asset as it entered the RAB (if known), adjusted for the effect of depreciation and indexation. We also consider that the business should pay any tax obligations from the regulatory profit it retains.

This approach means the business bears the risk of any profits or losses arising from the sale of an asset, and customers should not be affected. We consider this appropriate because while the asset was purchased by the business to provide regulated services to customers, the benefit customers received came through consumption of the service not ownership of the asset. Therefore, the impact of any profit or loss should lie entirely with the business (or shareholder).

Our full preliminary position on the treatment of asset disposals is outlined in Appendix B. This includes our proposed methods for estimating the regulatory value of assets when the original cost is unknown, and our proposed treatment of 'significant' assets compared to 'non-significant' assets.

Under our preferred approach, an asset is considered significant when the book value of the disposed asset or class of assets accounts for more than 0.5% of the opening RAB in the year in which the asset is disposed. Using this test, WaterNSW's proposed asset disposals would be classed as non-significant.

We propose to treat non-significant disposals in a simple, uniform manner. That is, removing non-significant disposals from the RAB using the book value of the disposals multiplied by the ratio RAB/book value in the year in which the disposal occurs. The ratio of the RAB/book value serves as a proxy to convert book values to regulatory values.

IPART seeks comments on the following

11 How should we treat WaterNSW's sales or disposal of assets in setting prices?

6.2.4 Non-regulated income

Non-regulated income is revenue earned from services not subject to IPART's price determination (ie, non-monopoly services) delivered using regulated assets. That is, assets in the RAB, which are also used to deliver monopoly services.

WaterNSW's proposed operating expenditure included a deduction of $6.0 million over the 2016 determination period representing customers' share of non-regulated income.[49] WaterNSW has not provided sufficient detail on its proposed non-regulated income to enable an assessment of the proportion of its total non-regulated income the proposed deduction represents.

In the past, we have shared this income 50:50 between the regulated service provider and its customers. Our preliminary position is that this should continue. However, as WaterNSW has provided insufficient information to assess the method it has used to calculate its adjustment we are unable to determine if its estimate is consistent with our preliminary position. We will request additional detail on the basis and treatment of forecast non-regulated income for the 2016 determination period from WaterNSW.

6.3 Allowance for the return on assets

The allowance for a return on assets included in the revenue requirement represents our assessment of the opportunity cost of the capital the regulated business (or its owner) has invested to provide the regulated services, and ensures that it can continue to make efficient capital investments in the future.

To calculate this allowance, we multiply the value of the RAB in each year of the determination period by an appropriate rate of return. As for previous reviews, we intend to determine the rate of return using a weighted average cost of capital (WACC).

In our 2012 Determination, we adopted the use of a real post-tax WACC. We propose to continue this approach to calculate the allowance for a return on capital for the 2016 Determination. Since the 2012 Determination, we have changed our methodology and process for calculating the WACC (see Box 6.1).[50]

[49] WaterNSW pricing proposal to IPART, June 2015, p 47.
[50] IPART, *Review of WACC Methodology – Final Report*, December 2013.

Box 6.1 Overview of our current WACC methodology

Our objective in determining the real post-tax WACC for a regulated business is to set 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.

To do this, we estimate the midpoint of two WACC estimates,[a] which are derived from current market data and long-term averages. This means that we apply a weighting of 50% to current market data and 50% to long-term averages in our estimate of the midpoint. We use an index of economic uncertainty (uncertainty index) to assess if the use of this midpoint is consistent with current economic conditions:

- If the uncertainty index is within 1 standard deviation from the long-term average of zero, we will use the midpoint of our WACC range (and our input parameters).
- If the uncertainty index is not within 1 standard deviation from the long-term average of zero, we will investigate potential causes for this. If we find compelling evidence that there has been a shift in financial market conditions, we will consider moving away from using the midpoint of the WACC input parameters.

We have also adopted revised approaches for estimating two of the WACC parameters – the debt margin, and the inflation adjustment for our real post-tax WACC:

- To estimate the debt margin, we use credit spreads for Australian non-financial corporations, published by the Reserve Bank of Australia (RBA). We consider that using data readily available through the RBA's website increases the transparency of our WACC determination process.[b]
- To estimate the inflation adjustment for our real post-tax WACC, we use a 10-year geometric average of the one-year RBA inflation forecast[c] and the middle of the RBA's target band of inflation (ie, 2.5%) for the remaining nine years.[d]

We also publish biannual updates of the WACC on our website to allow stakeholders to better replicate and predict our WACC decisions.[e] In conjunction with the update, we also release a WACC spreadsheet, which includes a working copy of our full WACC model.

a The two WACC estimates are the midpoints of two separate WACC ranges based on long-term averages and current market data (40-day average of most recent data).

b IPART, *WACC - IPART's New Approach to Estimating the Cost of Debt – Fact Sheet*, April 2014, pp 1-2. Tenor (or time-to-maturity) is the length of time until the maturity date of a bond.

c RBA's forecast of underlying inflation is obtained from its quarterly Statement on Monetary Policy.

d IPART, *New Approach to forecasting the WACC inflation adjustment – Fact Sheet*, March 2015, p 1.

e http://www.ipart.nsw.gov.au/Home/Industries/Research/Market_Update

6.3.1 WaterNSW's proposal on the return on assets

WaterNSW proposed a WACC of 4.58% for the 2016 determination period. When applied to the proposed capital program, return on assets represents 36% (or $295.1 million) of the total revenue requirement over the 2016 determination period.[51]

WaterNSW has largely applied our WACC methodology. However, it has applied a 40:60 weighting to short-term and long-term costs of debt (respectively) in estimating the WACC in its pricing submission.[52]

The parameters used to calculate the real post-WACC of 4.58% are shown in Table 6.5.

Table 6.5 WaterNSW's proposed real post-tax WACC for 2016 Determination period

	Short-term	Long-term
Nominal risk free rate	2.5%	4.5%
Inflation forecast	2.5%	2.5%
Debt margin	2.2%	2.9%
Market risk premium	8.2%	6.0%
Debt funding	60%	60%
Equity funding	40%	40%
Gamma	0.25	0.25
Equity beta	0.7	0.7
Cost of equity	8.2%	8.7%
Cost of debt	4.7%	7.4%
Real post-tax WACC	3.5%	5.3%
Real post-tax WACC mid-point (40:60, ST:LT)		4.58%

Note: Based on WaterNSW's current best estimates of likely outcomes for when IPART conducts its observation in 2016.

Source: WaterNSW supplementary information, 18 August 2015.

51 WaterNSW submission to IPART, June 2015, p 47.

52 WaterNSW supported IPART's methodology in their pricing proposal, however it has subsequently supplied IPART with information stating that they used a 40:60 short-term:long-term split for their cost of capital calculations.

6.3.2 IPART's response on the return on assets

Our preliminary response is to not accept WaterNSW's proposal to give a higher weighting to long-term debt (60%) and a lower weighting to short-term debt (40%) for the 2016 determination period. This is because our objective in determining the WACC is to establish a value that reflects the efficient cost of capital for a benchmark entity, and not replicate the actual cost of capital of any particular regulated utility. We consider that the efficient cost of capital for a benchmark entity is likely to reflect a mix of current market data and long-term data.

As discussed in Box 6.1, in setting the WACC, our decision-making framework includes the use of an uncertainty index. If the uncertainty index is not within 1 standard deviation from the long-term average of zero we will investigate potential causes for this. If we find compelling evidence that there has been a shift in financial market conditions, we will consider moving away from using the midpoint (50:50) of any of the WACC input parameters, including the cost of debt.

We will update the uncertainty index, cost of debt, the cost of equity and the inflation adjustment closer to our draft and final decisions.

IPART seeks comments on the following

12 What is a suitable rate of return on WaterNSW's assets?

6.4 Asset lives and regulatory depreciation

The allowance for regulatory depreciation included in the revenue requirement (and used in calculating the value of the RAB, as discussed above) is intended to ensure that the capital the regulated business (or its owner) invests in the regulatory assets is returned over the useful life of each asset.

To calculate the allowance for regulatory depreciation (or 'return of capital'), we need to determine the appropriate lives for the assets in WaterNSW's RAB, and the best depreciation method to use.

6.4.1 WaterNSW's proposal on asset lives and regulatory depreciation

WaterNSW's proposed allowance for regulatory depreciation is $107.3 million or 13% of its total proposed revenue requirement for the 4-year 2016 period.[53] To calculate this allowance, WaterNSW proposed to:

- Use an asset life of 60 years, for both new and existing assets, over the 2016 determination period, the same as in the 2012 Determination. WaterNSW is of the view that the capital investment profile in the current determination period will not materially change the average useful life of assets.
- Apply the straight-line method in calculating depreciation in its pricing proposal.[54]

6.4.2 IPART's response on the asset lives and regulatory depreciation

Regulatory depreciation depends on the value assigned to the RAB, the expected or assumed life of those assets, and the depreciation method used.

For this determination, we propose to continue to use the straight-line depreciation method to calculate WaterNSW's return of capital. This means that the total value of an asset is recovered evenly over its assumed life.

We will consider the full and remaining lives for assets in the RAB and appropriate asset lives for forecast capital expenditure deemed prudent and efficient.

We have not formed a preliminary view on WaterNSW's proposed asset lives. However, we note that WaterNSW's approach is consistent with that in the previous price review.

Our decision will be informed by the expenditure review to be undertaken by our consultants, which includes an assessment of the appropriateness of WaterNSW's proposed asset lives, given the state of its assets.

Sydney Water applies different asset lives to different asset classes for both new and existing assets. It uses an asset classification known as CEMLND: Civil, Electrical, Mechanical, Electronic, and Non-depreciating. Sydney Water note that the CEMLND helps them set depreciation estimates that reflect the likely economic life of the asset.[55] However, as WaterNSW's RAB is comprised largely of storage assets an alternative approach to calculating asset lives (such as CEMLND) may not have large impacts on regulatory depreciation, prices and customer bills if the current approach is considered an accurate estimate of depreciation.[56]

---

53 WaterNSW pricing proposal to IPART, June 2015, p 47.
54 WaterNSW pricing proposal to IPART, June 2015, p 49.
55 Sydney Water pricing proposal to IPART, June 2015, p 89.
56 Dams, pipelines and canals contribute about 80% of WaterNSW's GS RAB value.

If WaterNSW were to propose an alternative approach to calculating asset lives (such as CEMLND) in future, it would need to:

- ensure it has adequate information and record keeping systems in place to support such an approach, and
- estimate and explain the impacts on regulatory depreciation, prices and customer bills in its pricing proposal.

IPART seeks comments on the following

13 Is WaterNSW's proposed depreciation allowance, including assumed asset lives and the depreciation method underpinning this allowance, reasonable?

6.5 Allowance for tax

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

We calculate the tax allowance for each year by applying a 30% statutory corporate tax rate, adjusted for gamma to the business's (nominal) taxable income.[57] For this purpose, taxable income is the notional revenue requirement (excluding tax allowance) less operating cost allowances, tax depreciation, and interest expense. As part of calculating the appropriate tax allowance, the business is required to provide forecast tax depreciation for the determination period. Other items such as interest expense are based on the parameters used for the WACC, and the value of the RAB.[58]

The tax allowance is one of the last building block items we calculate, due to its dependence on other items such as operating cost allowances and WACC parameters.

[57] Under a post-tax framework, the value of franking credits (gamma) enters the regulatory decision only through the estimate of the tax liability.

[58] The nominal cost of debt is the sum of the nominal risk free rate and nominal debt margin.

6.5.1 WaterNSW's proposal on the tax allowance

WaterNSW has proposed that its tax obligation will remain constant at $3 million per annum for 2016-17 to 2018-19 and increase slightly to $3.1 million in 2019-20.[59] WaterNSW calculated the tax allowance based on 1.5% of the pre-tax annual revenue requirement, derived from the value of this ratio at the 2012 Determination.[60]

WaterNSW states that this approximation of its tax allowance was necessary because it did not have access to current tax depreciation forward estimates when it submitted the pricing proposal.

6.5.2 IPART's response on the tax allowance

We have not formed a preliminary view on WaterNSW's proposed tax allowance. We will seek further information from WaterNSW on its tax allowance for the 2016 determination period including relevant tax depreciation forward estimates.

As noted above, the tax allowance is one of the last building block items we calculate, due to its dependence on other items such as operating cost allowances and WACC parameters. Therefore, our decision on the actual tax allowance to be included in WaterNSW's notional revenue will be subject to our decisions on those other items.

59 WaterNSW pricing proposal to IPART, June 2015, p 47.
60 WaterNSW email to IPART, 30 July 2015.

7 Form of regulation

Form of regulation refers to the regulator's approach to regulating prices for monopoly services. The way in which prices are set determines how risks and rewards are shared between the regulated service provider and its customers, which in turn affects the incentives faced by the regulated service provider. Form of regulation considerations include:

- How to factor efficiency targets into prices and how to share the benefit of any further efficiency savings between the business and its customers.
- How to ensure efficient risk sharing between businesses and their customers.
- Whether to set price caps or revenue caps and whether to allow the business some control over the types and levels of prices they charge customers.

WaterNSW has proposed two incentive mechanisms to be included in our determination for the 2016 determination period:

- **Efficiency benefit sharing scheme (EBSS)** to increase and equalise the financial incentive to achieve efficiency savings during the regulatory period.
- **Raw Water Quality Incentive Payment Scheme (RWQIP**) to allow Sydney Water to provide an incentive payment to WaterNSW for improvement in raw water quality delivered to the Prospect Water Filtration Plant.

7.1 WaterNSW's proposal for an Efficiency Benefit Sharing Scheme

We set maximum prices that reflect our best estimate of the efficient costs required to deliver regulated services over the determination period. If the business is able to find efficiency savings in operating or capital expenditure, it has the option of passing these savings on to customers immediately through lower prices. However, it is not required to pass savings on immediately. Instead, it can keep the savings until we reset its prices and pass the savings on to customers in the next price determination.

Allowing the business to keep the savings provides a financial incentive for it to find and deliver efficiencies over the regulatory period. Ultimately, this benefits customers when revealed efficiency savings are passed through in the form of lower prices at the next determination period. The length of time that a business

can hold efficiency savings depends on the length of the price determination and when the saving is achieved during the regulatory period.

An EBSS is a mechanism that allows gains (or losses) to be held for a specified period of time, regardless of when they are achieved within the regulatory period (ie, it allows efficiency gains or losses to be carried over from one regulatory period to the next, subject to the holding period specified in the EBSS).

WaterNSW has requested that we implement an EBSS for the 2016 determination period. It argues that an EBSS would provide it with an equal incentive to make efficiency gains in each year of the determination rather than front-load them into the first year of the next determination period.

WaterNSW has provided some high level characteristics that describe the type of EBSS it has requested. These characteristics include:

- apply to operating expenditure only (an opex EBSS)
- symmetrical treatment of efficiency gains and losses
- exclude non-controllable costs
- a cap and collar, to restrict gains and losses under the EBSS in the 2016 determination period to 5% of operating expenditure, and
- 4-year carry over period.

A symmetrical EBSS means that there is a consistent treatment of efficiency gains and losses. This means that if WaterNSW makes an efficiency gain or loss, it will be held by the business for a defined number of years (proposed four years) before being passed onto consumers.

The exclusion of non-controllable costs means that changes in costs due to factors outside of WaterNSW's influence (eg, weather) would not be counted as either efficiency gains or losses. Specifically, WaterNSW proposed to exclude "…actuarial gains and losses and costs associated with routine and drought-induced pumping."[61]

A Cap and Collar mechanism restricts actual efficiency gains and losses treated under an EBSS. WaterNSW proposed the Cap and Collar be set at 5% of its operating expenditure for the Greater Sydney region (only).

WaterNSW proposed a four year carryover period. In NPV terms, this means that WaterNSW would realise approximately 25% of the benefit (cost) of any efficiency gain (loss), and at the same time, customers would receive about 75% of the benefit (cost) from any efficiency gain (loss). WaterNSW argues that if the holding period of the benefit is less than the duration of the regulatory period, this would not deliver an equal incentive to make efficiency gains in each year.

[61] WaterNSW pricing proposal to IPART, p 63.

7.1.1 IPART's response on the proposed Efficiency Benefit Sharing Scheme

WaterNSW has only provided high level characteristics of its proposed EBSS and has not provided sufficiently detailed information.

Sydney Water has proposed a similar EBSS for operating expenditure, and has provided more information on such an EBSS in its pricing proposal (see Appendix C of this Issues Paper and Chapter 7 of our Issues Paper for our concurrent review of Sydney Water's prices).

We have two main concerns with the opex EBSS proposed by Sydney Water:

1. Costs can be shifted between years in order to generate an efficiency carryover gain, when no efficiency saving has been achieved. This would result in customers paying higher prices in the short term and receiving no benefit in return.
2. Costs can be shifted into the third year of a determination period, which is proposed to be used as the 'base year' to set the allowance in the next regulatory period. This could allow the regulatory allowance to be artificially ratcheted up over time.

However, we are open to considering a modified version of Sydney Water's proposed operating expenditure EBSS, which manages risks while retaining the incentive for the utility to deliver permanent efficiency savings.[62] Under the modified EBSS:

- Only permanent efficiency savings would be rewarded, as the EBSS would only apply to incremental efficiency gains and losses that occur below the regulatory allowance. Specifically:
  - When actual expenditure falls below the allowance, the gain is rewarded. If actual expenditure subsequently increases back towards the allowance, the reward is clawed back.
  - If actual expenditure goes above the allowance, the loss is not included in the EBSS. If actual expenditure subsequently decreases towards the allowance, the gain is not included in the EBSS.
- IPART would retain discretion to set future expenditure allowances based on all relevant information including revealed costs, expenditure reviews and additional efficiency targets – to ensure that costs are not shifted into a specific 'base year' to influence the setting of the allowance in the next regulatory period.

A consideration is the complexity and administrative burden associated with an EBSS. Depending on its design and application, an opex EBSS could be a relatively complex mechanism. A benefit of the current form of regulation is that it is relatively light handed. IPART does not need to audit and confirm efficiency

62 See Chapter 7 of IPART, *Review of prices for Sydney Water Corporation from 1 July 2016 – Issues Paper*, September 2015.

savings made by the water utility. Additional complexity may reduce transparency in the regulatory framework and lead to less engagement from other stakeholders including customers. In this context, we note that the recent merger of the SCA and State Water to form WaterNSW may add uncertainty and complexity to the process of establishing and assessing any efficiency gains of WaterNSW Greater Sydney as a single entity.

For this review, we will consider whether an opex EBSS should be applied to WaterNSW for the 2016 Determination period. In doing so, we will consider the potential benefits relative to the risks and costs. Where possible, we will also look at how the benefits could be enhanced and how the risks and costs could be mitigated.

7.2 WaterNSW's proposal for a Raw Water Quality Incentive Payment Scheme

The RWQIP is a service performance incentive contained in the current Raw Water Supply Agreement (RWSA) between WaterNSW and Sydney Water.

Under the RWQIP, WaterNSW is eligible to receive up to $1 million annually from Sydney Water if water quality in a given year is better than the average quality of the preceding five years based on the following parameters: alkalinity, colour, turbidity and exceptional operating circumstances.

Modelling by WaterNSW suggests that the net benefit to WaterNSW would be in the vicinity of $30,000 to $300,000 per annum where an incentive was paid.

7.2.1 IPART's response on the proposed Raw Water Quality Incentive Payment Scheme

We support the rationale behind the RWQIP and inclusion of the mechanism in WaterNSW's prices to Sydney Water. In terms of WaterNSW's operating costs, we note that any incentive payments received by WaterNSW would be partially offset by additional operating costs for WaterNSW in delivering better quality water.

IPART seeks comments on the following

14 Will the inclusion of an Efficiency Benefit Saving Scheme (EBSS) in WaterNSW's pricing determination generate benefits?

15 Will the inclusion of a Raw Water Quality Incentive Payment in WaterNSW's prices to Sydney Water result in net cost savings?

8 Forecast water sales and customer numbers

Once we have determined the revenue requirement for the 2016 determination period, the next step in our approach is to decide on the forecast water sales and customer numbers. These forecasts are used in calculating the price levels necessary to recover the required revenue.

It is important that the forecasts are sound. If they differ markedly from WaterNSW's actual water sales volumes over the determination period, the determined prices will result in the utility significantly over- or under-recovering its required revenue. If the forecasts are lower than actual sales, its customers (and their end-use customers) will pay higher than efficient prices. If they are higher than actual sales, WaterNSW may not earn sufficient revenue to recover its efficient costs.

This chapter outlines WaterNSW's proposal on its water sales forecasts and customer numbers for the 2016 determination period, and discusses our preliminary response to this proposal.

8.1 WaterNSW's proposal on forecast water sales and customer numbers

WaterNSW's forecast water sales are summarised in Table 8.1. Forecast water sales to Sydney Water dominate WaterNSW's total forecast sales (around 99%). WaterNSW expects that these sales will increase by around 3% over the 4-year period, while sales to other customers remain flat at 2015-16 levels.

Table 8.1 WaterNSW's forecast water sales over the 2016 determination period (ML)

	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Sydney Water	522,674	527,763	533,174	537,654	543,798	2,142,389
Other customers	5,218	5,218	5,218	5,218	5,218	20,872
Total	527,892	532,981	538,392	542,872	549,016	2,163,261

Source: WaterNSW pricing proposal to IPART, June 2015, pp 29 and 37.

To develop its forecast sales volumes to Sydney Water, WaterNSW adopted Sydney Water's own forecast water sales to its end-use customers. These forecasts were provided by Sydney Water in June 2015 and incorporate the latest

population projections for Sydney.[63] Sydney Water attributes the overall increase in its forecast water sales to price effects (ie, residential demand responding to its proposed lower water usage price), and to growth in its customer base.

To form its forecast sales to other customers, WaterNSW informed us that it consulted with its council customers. The forecast annual sales volumes for 2015-16 are projected forward over the 2016-17 to 2019-20 period for both council customers and raw and unfiltered water customers. In aggregate, the forecast water sales (2016-17 to 2019-20) are 2.5% higher than water sales from 2012-13 to 2015-16.

Currently, WaterNSW's customer base comprises Sydney Water, three local councils and 61 smaller retail customers. It expects this to remain unchanged throughout the 2016 determination period. Over time, the number of customers WaterNSW serves has remained stable.[64]

8.2 IPART's response on forecast water sales and customer numbers

Our preliminary view is to accept WaterNSW's proposed forecast water sales to Sydney Water and its forecast customer numbers. The forecast sales volumes to Sydney Water are based on Sydney Water's own demand forecasts. At this stage, our preliminary view is that the model used to develop Sydney Water's forecasts is robust.[65]

WaterNSW indicated that its forecast sales volumes to Sydney Water assume that Sydney Desalination Plant (SDP) will not operate over the 2016 determination period, and thus that it will supply all Sydney Water's demand for bulk water. As Chapter 2 discussed, if and how SDP operates over the period is uncertain, as this depends on dam storage levels. However, if SDP did operate and displace some of WaterNSW's sales to Sydney Water, there would be no revenue consequence for WaterNSW under its pricing proposal. This is because its volumetric charge to Sydney Water would increase to offset any lost revenue from SDP sales to Sydney Water (see Chapter 7).

We will seek further information from WaterNSW on how its forecast water sales volumes to its council customers for the 2016 determination period relate to actual sales volumes over the current regulatory period, and the reasons for any significant forecast changes.

63 WaterNSW pricing proposal to IPART, June 2015, p 37.

64 In the 2012 Determination there were approximately 65 bulk raw and unfiltered water retail customers raw. IPART, *Review of prices for the Sydney Catchment Authority From 1 July 2012 to 30 June 2016 – Final Report* June 2012, p 7.

65 See IPART *Sydney Water Corporation Issues Paper*, Section 8.2.2, p 109 for more information.

IPART seeks comments on the following

16 Are WaterNSW's forecast water sales volumes for Sydney Water reasonable?

17 Are WaterNSW's forecast water sales volumes for its Council and raw water and unfiltered customers reasonable?

9 Price structure and prices

In this chapter we outline WaterNSW's proposed price structures, including its position on scarcity pricing at the wholesale level.

Our general approach to pricing for metropolitan water utilities is to set a combination of periodic fixed and usage (or volumetric) charges.

For the 2012 Determination, IPART accepted the former SCA's proposal to calculate bulk water prices to Sydney Water with reference to the short-run marginal cost of bulk water supply, where the volumetric price to Sydney Water was set to recover 20% of the revenue requirement and the fixed price set to recover the remaining 80%.

For the upcoming determination period, WaterNSW proposes to retain the structure of its prices to Sydney Water.

WaterNSW has proposed to change the structure of its prices for its three council customers, to align this price structure with that of the structure of its prices to Sydney Water. This would mean an increase in revenue derived from fixed charges to these councils, and a decrease in volumetric charges.

WaterNSW has proposed to retain the structure of its prices to its raw and unfiltered water customers.

9.1 WaterNSW's prices to Sydney Water

Sydney Water accounts for about 99% of WaterNSW's bulk water sales and revenue.

9.1.1 WaterNSW's proposed prices to Sydney Water

WaterNSW has proposed to maintain the current ratio of fixed to volumetric charges for its bulk water prices to Sydney Water. This structure was first implemented in the 2012 Determination. Prior to the 2012 Determination, SCA's price structure was 40% fixed and 60% volumetric, where 40% of revenue from Sydney Water was collected through the fixed charge and 60% through the volumetric charge.

The current structure of prices to Sydney Water, with a fixed price recovering 80% of WaterNSW's revenue requirement, provides greater revenue certainty to WaterNSW than the previous price structure. Under the previous price structure, there was greater scope for SCA to under or over-recover its costs should water sales significantly differ to forecasts.

WaterNSW maintains its position that the high fixed to volumetric price ratio reflects the largely fixed cost nature of its business and provides cost certainty to its largest customer.[66]

SDP price schedule

WaterNSW has proposed to maintain the Sydney Desalination Plant (SDP) related volumetric charge schedule we introduced in the 2012 Determination, which is tied to specific modes of SDP operation.[67] Under this schedule, WaterNSW levies Sydney Water a lower volumetric charge when SDP is not in operation (ie, not supplying water to Sydney Water), and a proportionally higher volumetric charge when SDP is in operation and supplying Sydney Water.

Consistent with the intent of the current volumetric charge schedule, SDP is also proposing a mechanism or formula to increase its volumetric charge to Sydney Water in proportion to the volume of water supplied by SDP to Sydney Water. This formulaic approach could be applied in the event the SDP's operating regime changes from the current situation where it is either supplying Sydney Water at its full capacity (ie, 'on' – at 90 GL per annum) or not supplying any water at all ('off').

WaterNSW's proposal (and our decision at the 2012 Determination) is aimed at ensuring WaterNSW receives sufficient revenue from its volumetric charge to recover its costs, regardless of the SDP's operating regime. The more water SDP supplies Sydney Water, the less water WaterNSW sells to Sydney Water (all other things being equal). This means that SDP's operating regime can impact on WaterNSW's revenue and its ability to recover its costs, given that it is largely a fixed cost business.[68]

Under the current MWP and the terms of its licence, SDP is required to operate at full capacity when WaterNSW's dam levels fall to 70% and must continue to do so until dam levels reach 80%. The Metropolitan Water Directorate is currently considering this operating regime as part of its review of the MWP.

---

66 WaterNSW pricing proposal to IPART, June 2015, p 58.

67 WaterNSW pricing proposal to IPART, June 2015, p 58.

68 We set SCA's prices to Sydney Water to recover 80% of SCA's revenue through a fixed charge (rising from 40%) and 20% from a variable or volumetric charge. This price structure better reflects SCA's large fixed costs of doing business, but does not perfectly match its cost structure (it's likely that its fixed costs are closer to 100%).

Table 9.1 shows WaterNSW's proposed prices to Sydney Water when SDP is 'off' under the current operating regime (ie, when SDP is not supplying water to Sydney Water).

Table 9.1 WaterNSW proposed prices to Sydney Water - SDP off ($2015-16)

	2015-16 Current	2016-17	2017-18	2018-19	2019-20
Fixed charge ($M/month)	14.17	13.22	13.34	13.57	13.89
Volumetric charge ($/ML)	85.81	75.17	75.08	75.73	76.63
Revenue from fixed charge ($M)	170.05	158.68	160.13	162.87	166.69
Revenue from volumetric charge ($M)	44.85	39.67	40.03	40.72	41.67
Total revenue ($M)	**214.90**	**198.35**	**200.16**	**203.59**	**208.36**
Change in revenue year on year		-8%	1%	2%	2%

Source: WaterNSW pricing proposal to IPART, June 2015, p 57.

Table 9.2 shows WaterNSW's proposed prices to Sydney Water when SDP is 'on' under the current operating regime (ie, when SDP is operating at full capacity, supplying Sydney Water the equivalent of 90 GL per annum).[69]

Table 9.2 WaterNSW proposed prices to Sydney Water - SDP on ($2015-16)

	2015-16 Current	2016-17	2017-18	2018-19	2019-20
Fixed charge ($M/month)	14.17	13.22	13.34	13.57	13.89
Volumetric charge ($/ML)	104.87	90.62	90.33	90.96	91.83
Revenue from fixed charge ($M)	170.05	158.68	160.13	162.87	166.69
Revenue from volumetric charge ($M)	45.37	39.67	40.03	40.72	41.67
Total revenue ($M)	**215.42**	**198.35**	**200.16**	**203.59**	**208.36**
Change in revenue year on year		-9%	1%	2%	2%

Source: WaterNSW pricing proposal to IPART, June 2015, p 57.

The effect of WaterNSW's proposal is that its volumetric charge to Sydney Water increases when SDP is in operation and supplying water to Sydney Water. When SDP is operating at full capacity, WaterNSW's proposed volumetric charge to Sydney Water is approximately $15 per ML (or around 20%) higher than when SDP is not in operation.

[69] It is assumed that the operation of the SDP will reduce annual demand for SCA's dam water by 90 GL.

Shoalhaven transfer costs

WaterNSW incurs additional costs in transferring water from the Shoalhaven. Under the 2010 MWP,[70] transfers from the Shoalhaven River commence when dam levels fall to 75% and continue until they rise above 80%.[71] As these transfers depend on dam levels (and hence factors such as weather conditions), they can be difficult to predict. Cost pass through mechanisms can be used to address such uncertainty.

In line with our 2012 Determination, WaterNSW has included a probability-based estimate of Shoalhaven transfers costs in its forecast operating expenditure, rather than proposing a cost pass through mechanism.

Scarcity pricing

In its pricing proposal, WaterNSW maintains its position to not introduce scarcity pricing for its bulk water services.[72]

As part of its proposal, WaterNSW re-submitted a report on scarcity pricing options it commissioned from Frontier Economics for the 2012 review.[73] In the report, Frontier Economics outlined the following broad approaches to setting WaterNSW's wholesale water charges:[74]

1. Pricing using a two-part tariff (ie, fixed and variable charge) with reference to the Long Run Marginal Cost (LRMC) of bulk water supply – ie, the volumetric charge to Sydney Water would be set with reference to LRMC.[75]
2. Pricing with reference to Short Run Marginal Cost (SRMC) of bulk water supply – ie, the volumetric charge to Sydney Water would be based on WaterNSW's short-run operating costs and increase when dam levels trigger increased operating costs.

---

70 Source: NSW Office of Water, *2010 Metropolitan Water Plan*, August 2010, p 24.

71 There are also other constraints. For example, the water level in Tallowa Dam has to be within 1 metre of the top water level of the dam. In severe drought, the plan allows the minimum operating level for transferring water from Tallowa Dam to Sydney to lower to minus three metres. WaterNSW must cease water transfers from the Shoalhaven system when total system storages reach 80%.

72 WaterNSW pricing proposal to IPART, June 2015, p 65.

73 Frontier Economics, *Options for scarcity pricing. A Final Report Prepared For Sydney Catchment Authority*, September 2011.

74 Frontier Economics, *Options for scarcity pricing, A Final Report Prepared For Sydney Catchment Authority*, September 2011, p 2.

75 Prior to the 2012 Determination, this option was the status quo, and price structure to Sydney Water was set at 40:60, where only 40% of the revenue was collected from the fixed charge.

3. Pricing based on the cost of alternative supply and demand options – the volumetric charge to Sydney Water would be based on estimates of the opportunity costs of using dam water. The price increases would have links to existing operating rules. This approach would result in a schedule of prices that increase as the storage levels decrease, broadly based on the cost of alternative supply options and/or the social marginal cost of water restrictions. Under this option, these prices would be in addition to, but separate from, WaterNSW's charges to recover infrastructure costs. That is, over and above any notional revenue requirement determined under current approaches.
4. Dynamically efficient pricing based on a system optimisation model for Sydney – this would involve developing an economic model to calculate a schedule of efficient prices, tied to dam levels, taking into account pricing, storages, and investment decisions in an integrated way.

At the time, Frontier Economics examined these pricing options on the basis that they would apply in conjunction with existing institutional and policy settings.[76] These institutional and policy settings are still current.

WaterNSW has suggested that a potential scarcity pricing model could be explored in the future where a price signal of the scarcity of water is sent to customers without exposing the water supplier to excessive demand risk. Under the suggested model:

- WaterNSW's volumetric price would be aligned with its short-run operating costs, the fixed charge would address any revenue shortfall (this is WaterNSW's current price structure and it is the proposed price structure for this determination), and
- A separate volumetric price would be set that reflects the estimated marginal value of water storage. This charge would be in addition to any notional revenue requirement to recover costs and would apply when predetermined triggers are reached (Option 3 above).

WaterNSW stated that this variant of scarcity pricing would generate additional revenue over that generated currently and it would therefore increase the average price to customers over the long run.[77]

WaterNSW urged us to consider how a wholesale scarcity price would operate in conjunction with the bulk water supply operating rules under the current MWP 2010.[78]

---

76 Frontier Economics, *Options for scarcity pricing, A Final Report Prepared For Sydney Catchment Authority*, September 2011, p 2.

77 WaterNSW pricing proposal to IPART, June 2015, p 65.

78 The Metropolitan Water Plan 2010 is the current water plan. The Metropolitan Water Plan 2015 has not been released.

9.1.2 IPART's response to WaterNSW's proposed prices to Sydney Water

For this price review, we will consider whether to:

- maintain the current 80:20 fixed to volumetric charge ratio or adopt an alternative price structure
- maintain the approach of tying the volumetric charge to the SDP's operating regime and its expected water sales to Sydney Water – either through a specified charging schedule or charging formula (depending on the expected SDP operating regime), and
- continue to include forecast Shoalhaven pumping costs in the revenue requirement or introduce a mechanism to add these costs to the volumetric charge as or after they are incurred.

Price structure

At the 2012 Determination, we changed the structure of WaterNSW's prices to Sydney Water from a 40:60 to a 80:20 **fixed to volumetric ratio.** This was designed to more accurately reflect the split between WaterNSW's fixed and variable costs, and give WaterNSW greater revenue certainty should water sales significantly differ from our forecasts. This reflected the largely fixed cost nature of WaterNSW's business.

For this review, we will consider whether there is a case to change the 80:20 fixed to volumetric ratio of charges to Sydney Water, taking into account a range of factors, including WaterNSW's cost structure, the distribution of risk between WaterNSW and Sydney Water, and stakeholder views.

SDP price schedule

Our preliminary view is to maintain the current approach of tying WaterNSW's volumetric charge to Sydney Water to SDP's operating regime.

This approach reduces revenue risk to WaterNSW and is also a move towards bulk water prices better reflecting the scarcity value of dam water (ie, under SDP's current operating regime, it has the effect of increasing WaterNSW's volumetric charge to Sydney Water when dam levels drop to below 70%).

Pass through mechanism for Shoalhaven and/or Fish River costs

We remain interested in pricing approaches that better reflect the scarcity value of dam water. At the wholesale level, such pricing can encourage the efficient sourcing and use of bulk water by retail water utilities, and enhance the potential for competition in the bulk water market.

We acknowledge, however, that the effect of pricing is currently limited somewhat by the operating rules governing the bulk water supply system (as outlined in the MWP). The rules determine, for example, when the SDP is switched on and off, when water is pumped from the Shoalhaven and when water restrictions apply. Nevertheless, we consider that over time pricing can inform and complement such rules.

In this context, our preliminary view is that, through the application of a cost pass through mechanism, the costs of pumping water from the Shoalhaven, and possibly the Fish River scheme, should be added to WaterNSW's volumetric charge to Sydney Water as these costs as incurred. We will also consider whether such a pass through mechanism should apply to WaterNSW's volumetric charges to its three council customers.

We consider that cost pass through mechanisms should only be applied in limited circumstances (see Box 9.1 below). However, the use of a pass through mechanism for the costs of water sourced from the Shoalhaven (and also possibly Fish River) would have the benefits of:

- recognising the uncertainty associated with forecasting these costs, and ensure that WaterNSW does not under or over-recover these costs, and
- sending a signal to WaterNSW's bulk water customers about the costs of increased water scarcity.[79]

[79] Under the MWP, the transfers from the Shoalhaven River commence when Sydney's total dam storage levels fall below 75%, but only while the storage level of Tallow Dam is above its minimum operating level of minus 1 metre from full supply level. WaterNSW must cease water transfers from the Shoalhaven system when total system storage reaches 80%.

Box 9.1 Cost pass through principles

Cost pass through mechanisms should only be applied in very limited circumstances. They are generally limited to situations where:

- a trigger event (to activate the cost pass through) can be clearly defined at the time of the price determination
- there is provision to approve or determine the resulting efficient cost before it is passed through to customers[a]
- it is clear the regulated business cannot influence the likelihood of the trigger event or the resulting cost
- it is clear that a cost pass through will result in prices that are more reflective of efficient cost, and
- the costs would have a potentially material impact on the regulated business.

[a] Under the IPART Act, this effectively means the cost must be clearly identified at the time of the price determination.

IPART seeks comments on the following

18 Should the current 80:20 fixed to volumetric ratio of bulk water prices to Sydney Water be retained?

19 Should the approach of increasing the volumetric charge in proportion to SDP's water sales to Sydney Water be retained?

20 Should we introduce a cost pass through mechanism for the costs of Shoalhaven transfers and/or Fish River Scheme bulk water purchases?

9.2 WaterNSW's prices to Councils

In addition to Sydney Water, WaterNSW supplies bulk water to Wingecarribee Council, Shoalhaven City Council and Goulburn-Mulwaree Council.

9.2.1 WaterNSW's proposed prices to Councils

WaterNSW's proposed prices for each of its local council customers are listed in Table 9.3 below.

According to WaterNSW, these proposed prices entail a change to price structure, from the current fixed to volumetric ratio of 25% fixed and 75% volumetric to a ratio of 80% fixed and 20% volumetric. This change would align the Councils' price structure to that of Sydney Water. According to WaterNSW, it has consulted with the three councils in regards to the change and it has received a positive initial response to the proposed changes.[80]

[80] Personal communication, E Chan, WaterNSW, July 2015.

The proposed prices also reflect a lower proposed revenue requirement from councils ($1.1 million per annum, as opposed to $1.4 million in 2015-16). WaterNSW's proposed revenue requirement from each council is based on the council's location (and hence cost to service) within the bulk water supply network.

Table 9.3 WaterNSW's proposed prices to Councils ($2015-16)

	2015-16 Current	2016-17	2017-18	2018-19	2019-20
Fixed charge ($/month)					
Wingecarribee Council	23,118	69,298	69,298	69,298	69,298
Shoalhaven City Council	600	1,559	1,559	1,559	1,559
Goulburn-Mulwaree Council	1,801	1,299	1,299	1,299	1,299
Volumetric charge ($/ML)	216.17	43.31	43.31	43.31	43.31
Total council revenue ($M)	1.4	1.1	1.1	1.1	1.1
Change in revenue year on year		-22%	0%	0%	0%

Source: WaterNSW pricing proposal to IPART, June 2015, pp 59-61.

9.2.2 IPART's response on WaterNSW's proposed prices to Councils

We will review WaterNSW's proposed changes to the structure of its prices to the Councils, taking into account the relationship between its cost structure and its proposed price structure, the distribution of risk between WaterNSW and the Councils, the views of stakeholders (including the councils), and our decisions on the structure of WaterNSW's prices to Sydney Water.

We will also review WaterNSW's method for attributing costs to each of the Councils. In our 2012 Determination, we moved to fully distributed cost pricing for the Councils and set prices based on the cost of assets identified by SCA to supply water to local councils. The costs were apportioned to each council based on the council's water demand.[81]

We note that WaterNSW's proposed change to the structure of its prices to the Councils would bring its price structure more into line with its cost structure, as it is largely a fixed cost business.

81 IPART, *Review of prices for the Sydney Catchment Authority, From 1 July 2012 to 30 June 2016 -Final Report*, June 2012, p 101.

We also note that the proposed change in price structure would have little impact on WaterNSW's overall level of revenue stability (and hence risk), given the Councils provide about 0.5% of its revenue. With a higher fixed charge, WaterNSW's proposed change in price structure may increase demand risk to the Councils (eg, if their end use customers demand less water than forecast). However, the Councils' demand for water has been relatively stable in recent times.

As noted above, we will also consider whether any cost pass through mechanism(s) that apply to WaterNSW's charges to Sydney Water should also be applied to its bulk water charges to the Councils.

IPART seeks comments on the following

21 Is WaterNSW's proposed structure of bulk water prices to the Councils (80% fixed, 20% volumetric) reasonable?

22 Is WaterNSW's proposed allocation of costs to each of the Councils aligned with its costs of servicing these customers?

23 Should the costs of Shoalhaven transfers and Fish River supply also be passed through to Council customers?

9.3 WaterNSW's prices to unfiltered and raw water customers

Unfiltered water customers are positioned downstream from WaterNSW's dams in the supply network.[82] They are usually close to filtration plants and take water at various points along the transmission lines (pipeline and Upper Canal). WaterNSW has 53 unfiltered water customers. These are generally semi-rural residential users.

Raw water customers are situated in locations where they can extract water direct from WaterNSW's dams. WaterNSW has eight raw water customers. These are primarily commercial users such as mine operators.

9.3.1 WaterNSW's proposed prices to unfiltered and raw water customers

WaterNSW has proposed to retain the current price structures and price levels (excluding the effects of inflation) for raw and unfiltered water customers set in the 2012 determination, as outlined in Table 9.4.

[82] Unfiltered water – is water that has been managed for quality, whether by chemical treatment or otherwise, but not treated at a water filtration plant.

WaterNSW's proposal is to continue to align the price structure of small customers with the price structure of the retail network (in most cases, Sydney Water's retail network). According to WaterNSW, this strategy ensures that prices do not provide incentives for customers to disconnect or connect from an alternative supply (where available).[83]

Under this strategy, prices to unfiltered water customers consist of a fixed charge (based on meter size) and a volumetric charge. Raw water customers face a volumetric charge ($/ML) only. WaterNSW states that it is difficult to determine the specific costs of supplying raw water customers and the allocation of fixed costs is difficult, because of the small number of raw water customers and that they are scattered over the supply area.

Table 9.4 WaterNSW's proposed prices to unfiltered and raw water customers ($2015-16)

	2015-16 Current	2016-17	2017-18	2018-19	2019-20
Unfiltered customers					
Fixed charge for 20mm meter ($/month)	104	104	104	104	104
Volumetric Charge (c/kL)	118	118	118	118	118
Fixed Charge Revenue ($M)	0.05	0.05	0.05	0.05	0.05
Volumetric Charge Revenue ($M)	0.24	0.24	0.24	0.24	0.24
Raw Water customers					
Fixed charge ($/month)	0	0	0	0	0
Volumetric Charge ($/ML)	680	680	680	680	680
Fixed Charge Revenue ($M)	0	0	0	0	0
Volumetric Charge Revenue ($M)	0.01	0.01	0.01	0.01	0.01
Total revenue from unfiltered and raw water customers ($M)	0.30	0.30	0.30	0.30	0.30

Source: WaterNSW pricing proposal to IPART, June 2015, p 60.

9.3.2 IPART's response on WaterNSW's proposed prices for unfiltered water and raw water customers

Our preliminary view is to maintain the current approach to setting prices for unfiltered and raw water customers, as proposed by WaterNSW.

In the 2012 determination, we accepted WaterNSW's reasoning and proposals for determining the prices for unfiltered water and raw water customers. We considered that the levels of prices would ensure bulk raw water and unfiltered water customers adequately contributed to the recovery of SCA's costs.

[83] WaterNSW pricing proposal to IPART, June 2015, p 60.

We also agreed that it was more administratively efficient to set one volumetric charge instead of creating a large number of individual prices for raw water customers.

IPART seeks feedback and comment on the following

24 Are WaterNSW's proposed prices and price structures to raw water and unfiltered water customers reasonable?

Appendices

A Matters to be considered under section 15 of the IPART Act

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).

B Regulatory treatment of asset disposals

The Tribunal has considered the issue of how asset sales, or more broadly, asset disposals, should be treated in pricing reviews. The purpose of this appendix is to outline our preferred policy or framework for asset disposals, for stakeholder comment (also included in Hunter Water and Sydney Water Issues Papers). After considering stakeholders' views, the Tribunal's decision on the treatment of asset disposals may depart from the indicative guidance provided below.

The primary issues associated with treating asset disposals are:

- How and when to remove an asset from the Regulatory Asset Base (RAB), given that it is no longer used to provide regulated services to customers.
- Whether the business should be provided an allowance in the regulatory building block to pay any capital gains tax resulting from the sale of an asset subject to capital gains tax.

From first principles, we consider the appropriate treatment of asset disposals is to remove the asset's identifiable **regulatory value** from the RAB and allow the business to pay any tax obligations from the regulatory profit it retains. In principle, the regulatory value is the value of asset as it entered the RAB, if known, adjusted for the effect of depreciation and indexation.

This approach means the business bears the risk of any profits or losses arising from the sale of an asset, and customers should not be affected. We consider this appropriate because while the asset was purchased by the business to provide regulated services to customers, the benefit customers received came through consumption of the service not ownership of the asset. Therefore, the impact of any profit or loss should lie entirely with the business (or shareholder).

However, data may be limited on individual asset values contained in the RAB and the original cost of individual assets. This means that in many cases, we will be required to estimate an asset's regulatory value.

We propose different methods for estimating the regulatory value of assets when the original cost is unknown, depending on when the asset being disposed entered the RAB (ie, whether it is a pre or post line-in-the-sand asset). We also distinguish between significant and non-significant assets.

B.1 Significant asset write-offs

Definition: Assets that are not sold and where the book value of the disposed asset or class of assets accounts for more than 0.5% of the opening value of the RAB in the year in which the asset is disposed.

Treatment: These disposals will be dealt with separately, as and when the need arises.

B.2 Significant asset sales

Definition: (a) Assets that incur capital gains tax (therefore this includes all land sales), or (b) those where the receipts from sale of the asset or class of assets accounts for more than 0.5% of the opening value of the RAB in the year in which the asset is sold.

Treatment pre line-in-the-sand: If the regulatory value of the asset as it entered the RAB is unknown, we propose that an estimate of the regulatory value would be made based on the ratio of the utility's RAB to depreciated replacement cost (DRC) at the time the RAB was established, multiplied by the sale value of the asset.

We consider that the RAB to DRC ratio is a good proxy for estimating an asset's regulatory value because it represents the average value at which all assets were entered into the RAB at the line-in-the-sand. The RAB to DRC ratio differs for each regulated business (see Table B.1). These are the ratios that would be used to determine the regulatory value of assets acquired pre line-in-the-sand to be removed from the RAB.

Table B.1 RAB to DRC as at line-in-the-sand (2000)

Regulated water business	Date of line-in-the-sand (year)	RAB at line-in-the-sand ($billion)	DRC value at line-in-the-sand ($billion)	RAB to DRC value
Sydney Water	2000	5.3	12.5	0.42
Hunter Water	2000	0.8	1.9	0.42
Gosford Council	2000	0.2	0.5	0.42
Wyong Council	2000	0.2	0.5	0.35
WaterNSW (former SCA)	2000	0.7	1.7	0.40

Note: The RAB to DRC ratio has been calculated using unrounded numbers. In 2000, the book value was the DRC for each of the businesses, except for WaterNSW where we have used an estimated DRC. This is because the 2000 book value for SCA was based on an Optimised Deprival Value (ODV) rather than a DRC.

Source: IPART reports and Annual Reports of regulated businesses.

The RAB to DRC ratio determines the regulatory profit from which the business would pay any tax obligation. This approach will allow the businesses to retain a significant proportion of the proceeds from the sale of their assets, removing potential disincentives to sell assets surplus to requirements. It will also mean that customers will not continue to provide the business with a return on or of assets that have been sold, which will be reflected in lower prices.

Given the difficulty of unravelling what assets were operational (and therefore included in the RAB) and what were non-operational at the time the line-in-the-sand was drawn (and the initial RABs established), we consider that we should apply the RAB to DRC ratio [to sales values] to all pre line-in-the-sand assets.

However, if a business can make a convincing case that an asset was clearly non-operational at the line-in-the-sand, then, on an exception basis, we would not adjust the RAB for that asset sale.

Treatment post line-in-the-sand: If an asset was acquired after the line-in-the-sand was drawn, then in principle it should be possible to estimate the value of the asset in the RAB (taking into account the effects of depreciation and indexation).

In practice, the available information will differ depending on the type of asset sold and when it was purchased. For example, the purchase cost of a parcel of land may be readily available. On the other hand, the cost of purchasing an old building, converting it to the required standard and maintaining it may not be available.

We propose to treat these disposals on a case-by-case basis, adopting the underlying principle that we use our best estimate of the regulatory cost of the asset. Some of the options that may be available to us include:

- tracking actual capex (actual purchase costs and maintenance and improvements), where possible and practical to do so, and calculating the appropriate depreciation and indexation
- using an indexed tax value, or
- using an indexed book value, which may be appropriate for example for plant and equipment, where the book value is generally the depreciated historical cost.

B.3 Non-significant asset disposals (sales and write-offs)

Definition: Assets that do not incur capital gains tax (therefore this excludes all land assets) and assets where the book value of the disposed asset or class of assets accounts for 0.5% or less of the opening value of the RAB in the year in which the asset is disposed.

Treatment: Businesses regularly dispose of assets that have not reached the end of their book lives, for example computer equipment, vehicles or old water meters. Some of these assets have market value and are sold, while others are simply written off and discarded. These 'normal' disposals are usually very small and have very little impact on the RAB.

We propose to treat these disposals in a simple, uniform manner. In particular, we propose removing non-significant disposals from the RAB using the book value of the disposals multiplied by the ratio RAB/book value in the year in which the disposal occurs. The ratio of the RAB/book value serves as a rough proxy to convert book values to regulatory values.

C Sydney Water's proposed EBSS

The sections below are drawn from our Issues Paper for our concurrent review of Sydney Water's prices. We outline Sydney Water's proposed operating expenditure EBSS and our response.

C.1 Sydney Water's proposed EBSS

According to Sydney Water, it proposed an opex EBSS to address the following issues with the current regulatory regime:[84]

- **Insufficient incentive to pursue efficiency savings.** Because the holding period for efficiency savings currently ranges from less than 1-year to a maximum of four years, the incentive for efficiency gains is insufficient.
- **A weakening incentive to realise efficiency gains over the determination period**. Because efficiency gains are currently passed through to customers at the end of the determination period, the incentive to implement permanent efficiency savings declines throughout the period.
- **Costly upfront expenditure reviews.** To the extent that the EBSS reveals the business' efficient cost, there will be less need for IPART to undertake costly upfront expenditure reviews.

Sydney Water proposed the EBSS apply to approximately 60% of its total operating expenditure for regulated services (ie, excluding its bulk water purchase costs). Under its proposed opex EBSS, efficiency gains and losses are held by Sydney Water for five years and then passed through in full to customers. This means that Sydney Water would retain 24% of the present value of permanent efficiency savings (or losses), while customers would receive the remaining 76% through lower (or higher) prices in the future.

84 Sydney Water pricing proposal to IPART, June 2015, p 260.

Sydney Water's proposed EBSS rewards underspends and penalises overspends on a 'symmetrical' basis. This means that efficiency gains are rewarded and efficiency losses are penalised at the same rate. Efficiency gains and losses are measured on an incremental basis, which involves a 2-step process:

1. Calculate the under (over) spend for each year of the determination period as the difference between actual and allowed expenditure.
2. Calculate the efficiency gain or loss for each year as the incremental change in the under (over) spend from one year to the next.

Sydney Water also proposed a 'cap and collar' that limits the potential gain or loss that could be carried over by the EBSS to +or- $50 million over the carry over period (ie, the following regulatory period). It noted that these constraints limit both the risks and potential benefits of the EBSS.[85]

When setting future operating cost allowances, Sydney Water proposed that IPART give greater weight to revealed costs (ie, actual expenditure in Year 3 of the previous determination period).[86] Sydney Water did not specify the weightings we should give to revealed costs in Year 3 of the regulatory period versus other relevant factors.

Sydney Water acknowledged the risks of an EBSS due to asymmetric information between the business and the regulator. It expressed the view that there is merit in complementing an EBSS with benchmarking to improve transparency and mitigate the information asymmetry problem.[87]

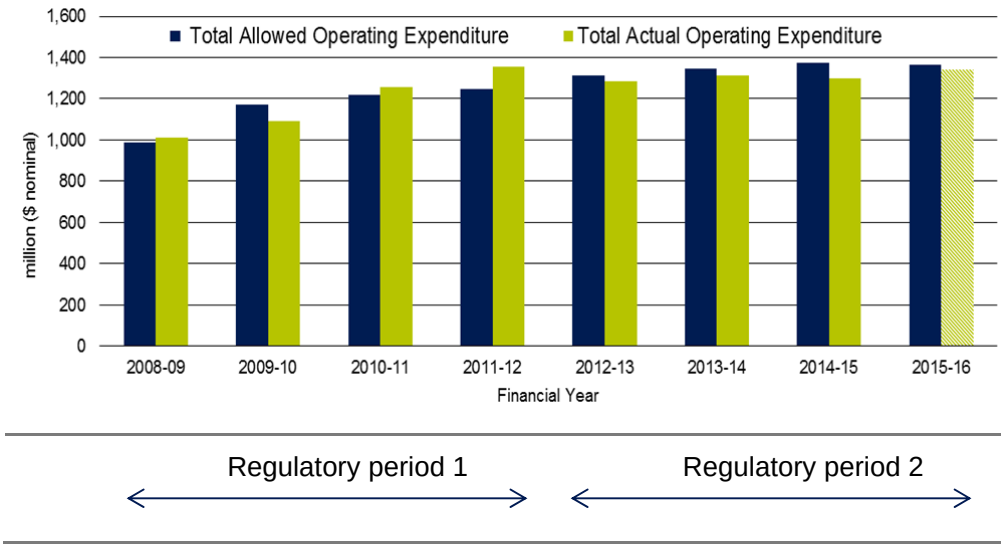
C.1.1 IPART's response on an opex EBSS

Our preliminary position is that we are open to considering a modified version of Sydney Water's proposed opex EBSS – one that equalises the financial incentive to achieve efficiency savings over time while limiting the potential for gaming.

Sydney Water's proposed EBSS would equalise the incentive to achieve permanent efficiency savings over time by allowing it to hold permanent efficiency savings for a fixed number of years, regardless of when they are made. This would remove the potential incentive to delay savings towards the end of the regulatory period and reduce the incentive to make temporary savings early in the regulatory period. Figure C.1 shows that Sydney Water has tended to increase actual expenditure up to or beyond the allowance in the later part of the regulatory period.

85 Sydney Water pricing proposal to IPART, June 2015, p 257.
86 Sydney Water pricing proposal to IPART, Appendix 5, June 2015, p 126.
87 Sydney Water pricing proposal to IPART, June 2015, p 265.

Figure C.1 Sydney Water – allowed versus actual opex ($ nominal)[a]



a Includes bulk water costs.

Note: actual operating expenditure in 2015-16 is a forecast provided by Sydney Water.

Data source: AIR analysis template.

Concerns with Sydney Water's proposed opex EBSS

We have two main concerns with Sydney Water's proposed opex EBSS:

1. Sydney Water's proposed EBSS allows costs to be shifted between years in order to generate an efficiency carryover gain when no efficiency saving has been achieved. This would result in customers paying higher prices in the short term and receiving no benefit in return.
2. Sydney Water's proposed EBSS allows costs to be shifted into the third year of a determination period, which is used as the 'base year' to set the allowance in the next regulatory period. This could allow the regulatory allowance to be artificially ratcheted up over time.

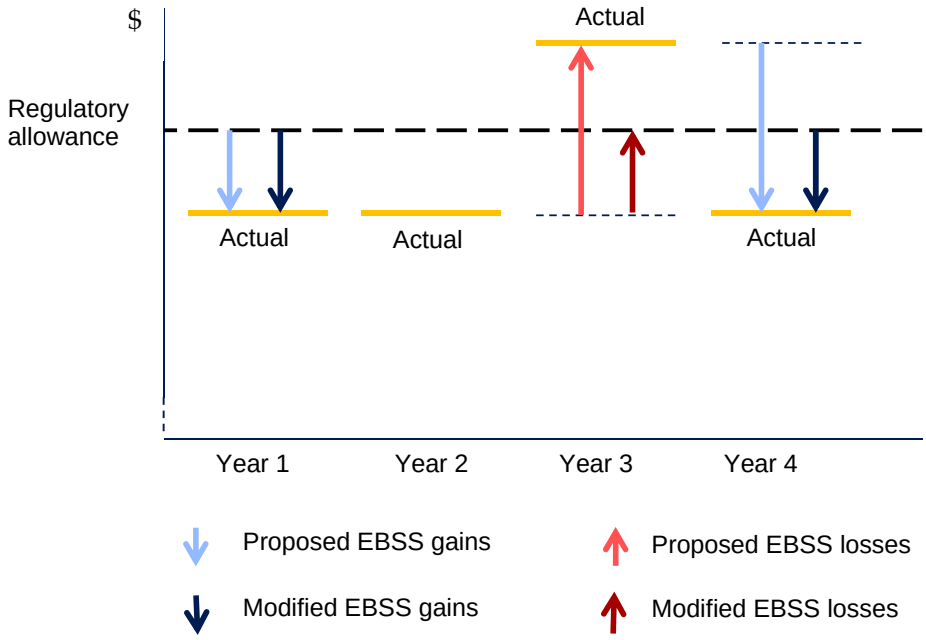
As a potential alternative option, we are considering a modified opex EBSS that attempts to address our above concerns while retaining the incentive to deliver permanent efficiency savings.

1. To ensure that only permanent efficiency savings are rewarded, our modified EBSS only applies to incremental efficiency gains and losses that occur below the regulatory allowance. Specifically:
   - When actual expenditure falls below the allowance, the gain is rewarded. If actual expenditure subsequently increases back towards the allowance, the reward is clawed back.
   - If actual expenditure goes above the allowance, the loss is not included in the EBSS. If actual expenditure subsequently decreases towards the allowance, the gain is not included in the EBSS.

2. To ensure that costs are not shifted into a specific 'base year' to influence the setting of the allowance in the next regulatory period, IPART would retain full discretion to set future allowances based on all relevant information including revealed costs, expenditure reviews and additional efficiency targets.

Figure C.2 illustrates the difference between Sydney Water's proposed opex EBSS that applies symmetrically to all incremental efficiency savings (losses) above and below the regulatory allowance compared to the modified opex EBSS that applies only to incremental efficiency savings (losses) below the regulatory allowance.

Figure C.2 Difference between proposed and modified opex EBSS



Source: IPART analysis.

Setting the length of the EBSS holding period

The length of holding period is a key design feature of the opex EBSS that determines the strength of the financial incentive to make efficiency savings and how these savings are shared between the business and its customers.

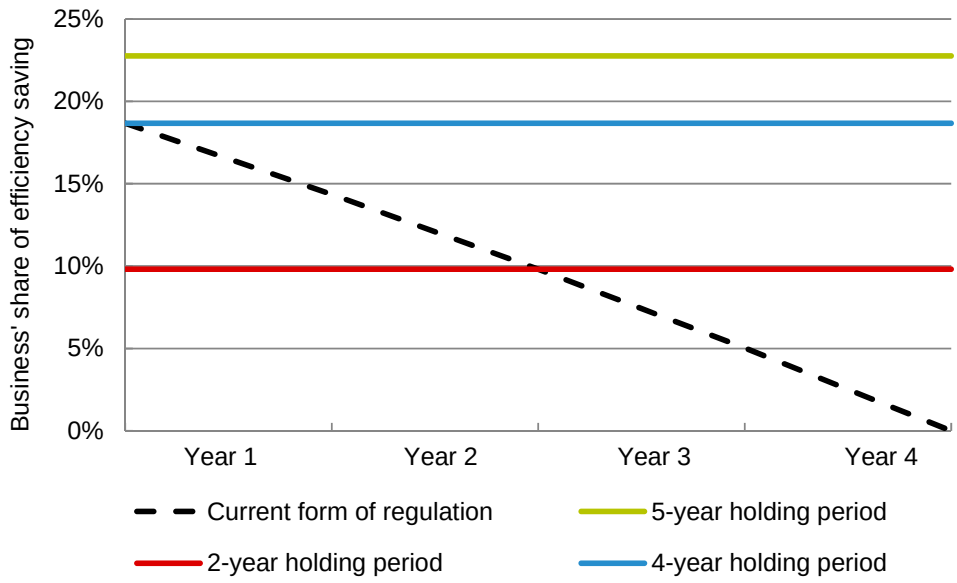
A benefit of the opex EBSS is that, unlike the current form of regulation, it allows the length of the holding period to be set independently from the length of determination period. Because we do not know the relationship between the holding period and the incentive to deliver efficiency savings, selecting an appropriate holding period is likely to require considerable judgement.

Sydney Water has proposed a five year holding period, which we estimate would allow it to retain approximately 23% of the present value of permanent efficiency savings.[88] Alternative options include:

- A 4-year holding period - matching Sydney Water's proposed length of determination of four years.
- A 2-year holding period - the average of the current holding period which falls from four years at the start of the determination to zero at the end.

Figure C.3 illustrates the share of any permenant efficiency savings that would be held by Sydney Water under the current, proposed and alternative holding periods.

Figure C.3 Business' share of efficiency savings for various holding periods



Note: calculated as the present value of a $1 efficiency saving over the specified holding period divided by the present value of a $1 efficiency saving into perpetuity. Using a discount rate of 5.3% p.a. consistent with Sydney Water's pricing proposal.

Source: Sydney Water pricing proposal to IPART, June 2015, Figure 10-4, p 259. IPART analysis.

[88] That is, the present value of a $1 gain/loss per year for five years relative to the present value of a $1 gain (loss) per year into perpetuity is 23%. The remaining 77% of the present value of the perpetuity occurs from year 6 into perpetuity and is assumed to be passed on to customers through lower prices. This is based on a discount rate of 5.3% p.a. consistent with Sydney Water's pricing proposal. Sydney Water calculated the sharing ratio to be 24% to Sydney Water and 76% to customers by over-discounting the future benefit to customers by one period. In Figure A5-1 on page 125 of the appendix to Sydney Water's pricing proposal, the present value of the future customer benefit of 27 into perpetuity is discounted using a discount factor of 0.77. It should have instead been discounted using a discount factor of 0.81.

In deciding on the appropriate length of the holding period, we will consider all relevant factors including what can be observed from competitive markets and what is likely to maximise long term benefits to customers.

Glossary

2005 Determination	*Sydney Water Corporation, Hunter Water Corporation, Sydney Catchment Authority – Prices of Water Supply, Wastewater and Stormwater Services, Final Determination and Report,* September 2005 (Determination Nos 5, 6 and 7, 2005).
2005 determination period	The period from 1 October 2005 to 30 June 2009, as set in the 2005 Determination.
2009 Determination	*Review of prices for the Sydney Catchment Authority from 1 July 2009*, June 2009 (Determination No 3, 2009).
2009 determination period	The period commencing 1 July 2009 to 30 June 2012.
2012 Determination	*Review of prices for the Sydney Catchment Authority from 1 July 2012*, June 2012 (Determination No 2, 2012).
2012 determination period	The period commencing 1 July 2012 to 30 June 2016.
2016 determination period	The period commencing 1 July 2016.
70/80 rule	Under Government's 2010 Metropolitan Water Plan, SDP is to operate at full production and supply Sydney Water's area of operations when the total dam storage level is below 70% and continue to do so until the total dam storage level reaches 80%.
Annual revenue requirement	The notional revenue requirement in each year of the determination period.

Core operating expenditure	Operating expenditure central to operations as opposed to non-core expenditure which covers items outside of normal activities such as pumping from the Shoalhaven River.
Council customers	WaterNSW has three local Council customers - Wingecarribee Council, Shoalhaven Council and Goulburn-Mulwaree Council.
current determination period	The period from 1 July 2012 to 30 June 2016, as set in the 2012 Determination.
CPI	Consumer Price Index.
determination period	The period over which price limits (maximum prices) are set by IPART.
DRC	Depreciated Replacement Cost
EBSS	WaterNSW proposal for an Efficiency Benefit Sharing Scheme to provide it with equal incentive to make efficiency gains in each year of the determination.
EPA	Environment Protection Authority
GL	Gigalitre.
Greater Sydney area	Water catchments that service WaterNSW storages including the Blue Mountains, Shoalhaven, Warragamba, Upper Nepean and Woronora catchments.
Hawkesbury-Nepean Valley Flood Management Review	Established to consider flood planning, flood mitigation and flood response in the Hawkesbury-Nepean Valley.
IPART	Independent Pricing and Regulatory Tribunal of NSW.
IPART Act	*Independent Pricing and Regulatory Tribunal Act 1992* (NSW).
kL	Kilolitre.
LRMC	Long Run Marginal Cost (of supply).

Metropolitan Water Plan (MPW 2010)	Designed to set out the mix of water supply and demand management measures to ensure a secure, cost effective and sustainable water supply for greater Sydney.
ML	Megalitre.
Notional revenue requirement	Revenue requirement set by IPART that represents the efficient costs of providing WaterNSW's monopoly services
NPV	Net Present Value.
RAB	Regulatory Asset Base.
Raw water customers	Receive raw water directly from WaterNSW's dams.
Raw Water Quality Incentive Payment Scheme	Under the RWQIP, WaterNSW is eligible to receive up to $1 million annually from Sydney Water if water quality in a given year is better than the average quality of the preceding five years.
RWSA	Raw Water Supply Agreement between Sydney Water and WaterNSW
SCA	Sydney Catchment Authority.
SDP	Sydney Desalination Plant Pty Ltd.
Scarcity pricing	Scarcity pricing would see prices rise when water is scarce and decrease when water becomes more abundant.
Shoalhaven Transfers	Transfers of bulk water from dams in the Shoalhaven region to dams that supply the Sydney region.
Shoalhaven Transfer Works	Infrastructure involved in transferring water from the Shoalhaven region to dams supplying Sydney.
SOC	State-owned corporation
SOC Act	*State Owned Corporations Act 1989* (NSW)

SRMC	Short Run Marginal Cost (of supply).
State Water	The former State Water owned and maintained major infrastructure assets that enabled delivery of bulk water to approximately 6,300 licensed bulk water users on the state's regulated rivers – now part of WaterNSW.
Sydney Catchment Authority	The former Sydney Catchment Authority owned and maintained infrastructure to supply bulk water mainly to Sydney Water – now part of WaterNSW.
Sydney Water	Sydney Water Corporation.
Sydney Water Act	*Sydney Water Act 1994* (NSW)
Unfiltered customers	Unfiltered customers are positioned relatively close to filtration plants and take water at various points along the transmission lines (pipeline and Upper Canal).
upcoming determination period	the period commencing 1 July 2016.
WACC	Weighted Average Cost of Capital.
WaterNSW	WaterNSW was created under the WaterNSW Act 2014, through the merger of SCA and State Water.
Water NSW Act 2014	Enacted to combine the two bulk water suppliers, State Water and Sydney Catchment Authority.