IPART

Independent Pricing and Regulatory Tribunal
New South Wales

# WaterNSW

## Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021

**Draft Report**

**Water**

**March 2017**

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# Invitation for submissions

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

**Submissions are due by 17 April 2017.**

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:

**WaterNSW rural price review 2017**
Independent Pricing and Regulatory Tribunal
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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.

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# 1 Executive Summary

## 1.1 Introduction

The Independent Pricing and Regulatory Tribunal of NSW (IPART) is determining the maximum prices that WaterNSW can charge for the delivery of its rural bulk water services.[1]

WaterNSW delivers bulk water to irrigators and other licence holders on regulated rivers across NSW.[2] WaterNSW operates 42 large dams and weirs and delivery infrastructure such as pipelines, to deliver water to around 6,300 customers.[3]

We regulate WaterNSW's prices for its rural bulk water services, which relate primarily to storing and delivering water to entitlement holders in 13 valleys[4] across NSW.

### Summary

Our draft decisions are that WaterNSW's efficient core costs are falling. There are significant reductions in our allowances for operating expenditure and return on capital. Whilst this is in part offset by a modest increase in our allowance for regulatory depreciation, the broad reduction in efficient costs means that, without inflation, draft prices and bills to recover WaterNSW's core costs are falling in most valleys.

In the Murray and Murrumbidgee valleys, customers also pay MDBA charges to recover the costs of WaterNSW's payments to the Murray-Darling Basin Authority (MDBA). These costs are rising, and while we have applied further efficiency savings to these MDBA costs, MDBA charges are increasing. This has put upward pressure on total bills in these valleys, in particular the Murray valley.

We have also made some changes to tariff structures and the high security premium, which impact entitlement charges, particularly in the Gwydir, Hunter and Murray valleys.

This Draft Report sets out our draft decisions on WaterNSW's maximum prices over the **4-year period** from 1 July 2017 to 30 June 2021 (the 2017 determination period).

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

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1 In June 2016, we released our Determination and Final Report setting out the maximum prices that WaterNSW can charge for its bulk water services for Greater Sydney.

2 The difference between unregulated and regulated rivers is that regulated rivers are controlled by a major storage or dam to supply water.

3 Some irrigators are served directly by Irrigation Corporations or Districts (ICDs) in the Lachlan, Murray and Murrumbidgee valleys. These ICDs are the licence holders and as such the direct customers of WaterNSW. The draft prices we have set apply to the ICDs. The infrastructure within ICDs is managed by the ICDs themselves and we do not regulate the prices or charges they levy on end users.

4 Including the Fish River Water Supply Scheme (FRWS).

We are seeking submissions from stakeholders on the Draft Report and Draft Determination. We will consider these submissions before making our Determination in June 2017. Details on how to make a submission are provided on page iii at the front of this report. The closing date for submissions is **17 April 2017**.

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

- **Bulk water charges** – annual prices to recover customers' share of the efficient costs of delivering WaterNSW's rural bulk water services. These are levied as a two-part tariff, comprising:
  - fixed entitlement charges - $ per megalitre (ML) of licensed entitlement, and
  - variable usage charges - $ per ML of water used (extracted from the river).
- **MDBA and BRC charges** – which we have set for licence holders in the Murray and Murrumbidgee (MDBA) and Border (BRC) valleys to recover the costs of services delivered by the Murray Darling Basin Authority (MDBA) and the Barwon-Dumaresq Border Rivers Commission (BRC). These are also levied as a two-part tariff, comprising entitlement and usage charges.
- **Miscellaneous charges** – which include a range of charges for meter services and other miscellaneous activities.

Unless otherwise stated, the dollar figures in this Draft Report are in $2016-17.

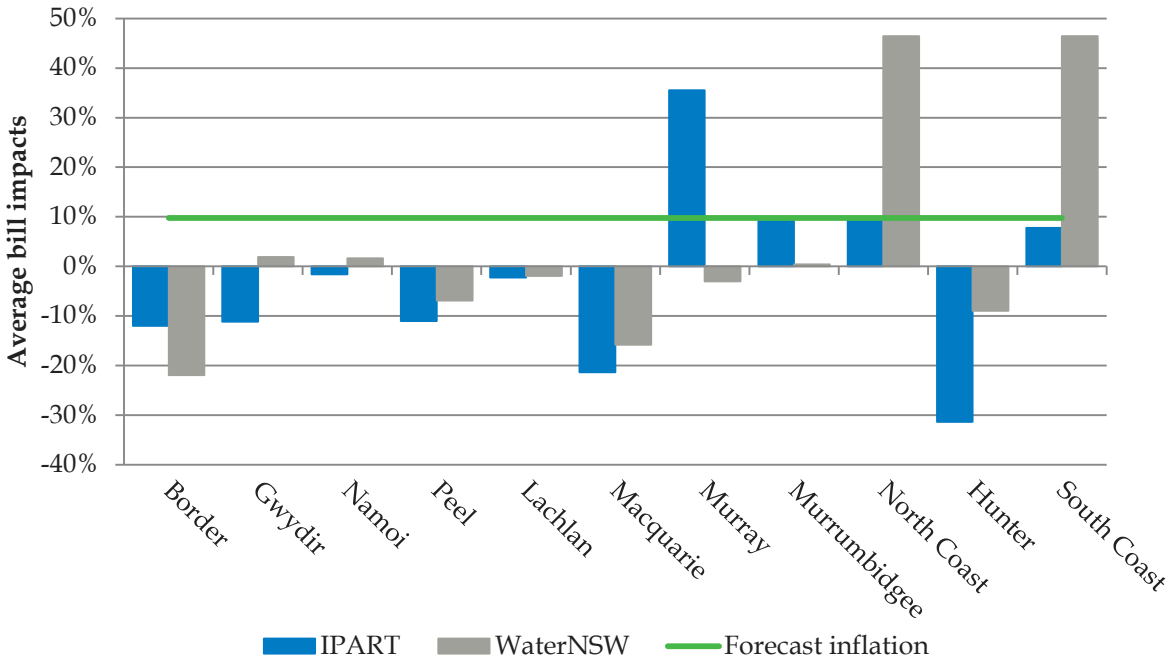
The sections below summarise the impact of our draft decisions on customers' bills, key determinants of prices and bills, the prices for each valley, and the structure of this Draft Report. We conclude this chapter by listing our key draft decisions.

## 1.2 Customer bills in most valleys would fall in real terms, however bills would increase in some valleys

### High Security customers

Figure 1.1 below sets out the bill impacts for High Security customers (HS customers) arising from our draft determination.

**Figure 1.1 IPART analysis of bill impacts for high security customers compared to WaterNSW proposed (% change from 2016-17 to 2020-21, $nominal[a])**




**a** Forecast inflation is 9.8% over the 2017 determination period.

**Note:** Includes BRC and MDBA costs. Lowbidgee is excluded as there are only supplementary entitlements in the valley.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

Figure 1.1 shows that, under our draft determination, typical bills[5] for HS customers would fall in the following valleys:

- Border
- Gwydir
- Namoi
- Peel
- Lachlan
- Macquarie, and
- Hunter.

These reductions, over the period 2016-17 to 2020-21, range from -31% in the Hunter valley, to -2% in the Namoi valley. Key drivers of these reductions include:

- lower efficient costs, including operating expenditure and return on capital (through a lower WACC[6]) in all valleys, and
- lower HS premiums, in particular in the Hunter, Gwydir and Macquarie valleys.

5 Including forecast inflation of 9.8%.

6 Weighted Average Cost of Capital (WACC).

HS customer bills would increase, but less than inflation in the Murrumbidgee, North Coast and South Coast valleys.

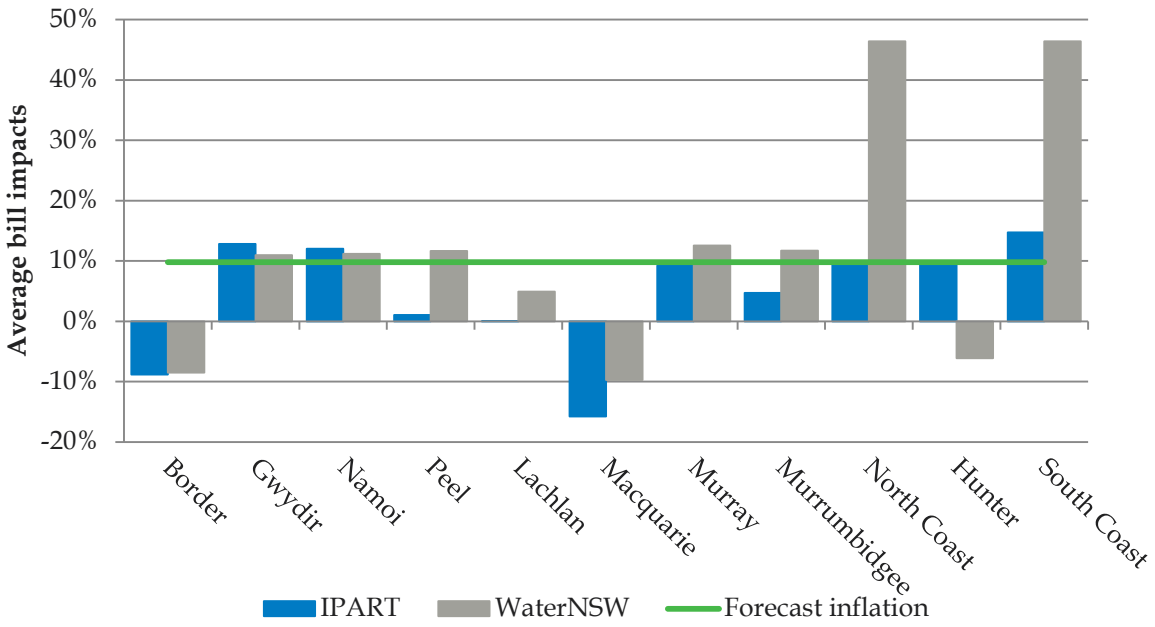
In the Murray valley, HS customers would see a significant increase (+35%) in bills, including inflation. This is a result of:

- an increase in the customer share of WaterNSW's MDBA-related costs
- our draft decision to structure MDBA charges at 80:20 fixed to variable, and
- an increase in the HS premium in the Murray valley.

### General Security customers

Figure 1.2 below sets out the bill impacts for General Security customers (GS customers) arising from our draft determination.

**Figure 1.2 IPART analysis of bill impacts for general security customers compared to WaterNSW proposed (% change from 2016-17 to 2020-21, $nominal[a])**




**a** Forecast inflation is 9.8% over the 2017 determination period.

**Note:** Includes BRC and MDBA costs.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

Figure 1.2 shows that, under our draft determination, typical bills[7] for GS customers would fall in the Border (-9%) and Macquarie (-16%) valleys. These reductions are due to a general decrease in operating expenditure and the return on capital in these valleys.

The following valleys show an increase in GS bills at or below the forecast rate of inflation:

- Peel
- Lachlan
- Murray
- Murrumbidgee
- North Coast, and
- Hunter.

These modest increases are the result of lower efficient costs, being partially offset by:

- a rebalancing to recover more costs through general security charges (particularly in the Hunter valley)
- inflation, and
- higher MDBA costs (for the Murray and Murrumbidgee).

GS customer bills would increase marginally above the forecast rate of inflation in the Gwydir, Namoi and South Coast valleys.

## 1.3 Key drivers of bill changes

Our allowances for WaterNSW's efficient costs have generally decreased across the State: the customer share of WaterNSW's average annual notional revenue requirement (or efficient costs) has decreased by $5.1m (or 6.7%) for the 2017 determination period, compared to the average per year from 2014 to 2017.

However, the effects of this cost reduction has been offset, or at least partially offset, by:

- an increase in MDBA and BRC charges in some valleys
- our decision to update the HS premiums, and
- including an unders and overs mechanism (UOM) payback and volatility allowance in prices.

The key elements of our draft pricing decisions, including some of the above-mentioned drivers behind bill decreases and increases, are explained further below.

7 Including forecast inflation of 9.8%.

### 1.3.1 WaterNSW's efficient costs are lower, excluding MDBA and BRC costs

#### Operating expenditure and return on assets are falling sharply

WaterNSW's proposed average annual customer share of operating expenditure over the 2017 determination period is 25% below its allowance for 2016-17. We have made only very minor further reductions to this proposal. This reflects the significant savings WaterNSW has identified from the integration and restructure of the former State Water Corporation and Sydney Catchment Authority.

WaterNSW's draft allowance for its return on capital is also lower than current levels. This largely reflects a reduction in the Weighted Average Cost of Capital (WACC), from the current level of 4.3% to 3.4% for the 2017 determination period.[8]

For the 2017 determination period, WaterNSW's customer share capital expenditure allowance is $118 million, which is 21% lower than WaterNSW's proposal and 103% higher than its allowance for the previous four years.

### 1.3.2 Factors offsetting WaterNSW's lower costs

Several factors offset, or at least partially offset, the effect of WaterNSW's cost reductions in a number of valleys. These are outlined below.

#### MDBA and BRC costs are rising

MDBA and BRC related costs are rising. WaterNSW proposed a 13% increase in the customer share of MDBA and BRC costs, from $13.6 million per year over the ACCC's 2014 determination period to a mean of $15.4 million per year over the 2017 determination period.

MDBA costs are allocated to the Murray and Murrumbidgee valleys, and BRC costs to the Border valley.

We have applied an efficiency adjustment of 1.25%, compounded per annum, to both BRC and MDBA pass through charges. This reduces total MDBA and BRC related costs over the 2017 determination by around $1.9 million.

We have set MDBA (in the Murray and Murrumbidgee valleys) and BRC (Border valley) charges to recover the MDBA and BRC costs.

These charges are rising, and when combined with changes to tariff structures, lead to increases in total bills in the Murray and Murrumbidgee valleys, and in particular for High Security licence holders in the Murray valley.

#### We have included a revenue volatility allowance

WaterNSW proposed to include $3.6 million per annum to manage its revenue volatility risk through its proposed risk transfer product (RTP). Our draft decision is to allow a volatility

8 For Murray-Darling Basin (MDB) valleys. Our draft decision on the WACC for Coastal Valleys is 4.9%.

allowance of $0.765 million.[9] This recognises that WaterNSW is subject to revenue volatility risk, which arises from the difference between its largely fixed cost structure and its price structure (which is 40:60 fixed to variable in many valleys).

We have also decided to discontinue the unders and overs (UOM) mechanism, as we do not consider it materially mitigates revenue volatility risk. To address the existing UOM balance, we have incorporated a UOM payback amount in prices. This UOM payback puts upward pressure on bills for some customers, namely for general security customers in the Macquarie, Lachlan, Gwydir and Namoi valleys. This is a temporary increase, applicable until the UOM balance in each valley is returned to zero.[10]

### We have updated the High Security premium

The High Security premium (HS premium) is the difference in entitlement charges between high security and general security licences. It represents the additional security and water availability of high security licences relative to general security.

We have updated the HS premiums in each valley, to incorporate data since 2006, when the HS premiums were set. This has led to a modest reduction in HS premiums in most valleys, but an increase in the Lachlan and Murray valleys.

Whilst the HS premium reductions were generally modest, they were particularly pronounced in:

- Hunter valley, where the HS premium has fallen from 3.09 to 1.29, and
- Gwydir valley (from 4.13 to 3.19).

However, the HS premium has increased significantly in the Murray valley, rising from 1.95 to 2.45. This has put upward pressure on bills for HS licences in the Murray valley, and shifted costs from GS to HS entitlement holders.

### We have changed some tariff structures

We have retained the existing fixed to variable tariff ratios (40:60 in most valleys), however we have moved to an 80:20 fixed to variable ratio in:

- Lowbidgee valley and the Fish River Water Supply Scheme (FRWS), and
- for MDBA and BRC charges.

This means that, for these tariffs, about 80% of revenue is forecast to be received from entitlement changes and 20% from usage charges. We consider that, relative to 40:60, an 80:20 tariff structure better reflects WaterNSW's cost structure, which is predominantly fixed.

9 Our draft decision of $0.765 is based on our estimate of WaterNSW's cost to self-insure against its revenue volatility risk.

10 We will update the UOM balances in each valley to include the 2016-17 year in our Final Report and Determination.

Our draft decision to set the MDBA and BRC tariff structure at 80:20 means that the revenue required to pay for MDBA and BRC related costs shifts away from water usage,[11] to water entitlements.

We have also set draft prices on the basis that the HS premium for bulk water charges in each valley also applies to MDBA and BRC charges. This is a reflection that MDBA and BRC costs should be shared between HS security and GS security customers consistent with WaterNSW's core costs.

### 1.3.3 We have adopted a new approach to setting prices on the North Coast and South Coast

Prices in the North Coast and South Coast valleys do not generate sufficient revenue to achieve full recovery of efficient costs. In our 2010 determination, we capped annual real price increases at 10% per year in both valleys.[12]

For our draft 2017 determination, we have taken a new approach to setting prices in these valleys.

In the North Coast valley, we have frozen prices in real terms. This means prices would only increase with inflation over the next four years.

In the South Coast valley, we have set prices at the midpoint of our estimated efficient pricing band. The upper bound of this pricing band represents customers' estimated capacity to pay, while the lower bound is an estimate of the costs WaterNSW would avoid if it did not have to supply an additional unit of water. This means that prices in the South Coast are rising only modestly over the determination period.

Our approach to setting prices in the North Coast and South Coast valleys is set out in Chapter 12.

## 1.4 Our draft prices are broadly lower than current prices, excluding inflation

Our draft bulk water entitlement and usage, MDBA and BRC and Fish River Water Supply Scheme prices are outlined in the sections below. They are presented in 'real' $2016-17 – ie, they exclude the effects of inflation over 2017-18 to 2020-21.

11 At its 2014 decision, the ACCC set MDBA and BRC charges at 40:60 in the Border, Murray and Murrumbidgee valleys.

12 IPART, *Review of bulk water charges for State Water Corporation – From 1 July 2010 to 30 June 2014*, June 2010, pp149.

### 1.4.1 Entitlement charges are falling for most customers

Under our draft decision, entitlement charges for most customers are falling in real terms compared to current prices. Our draft entitlement charges are set out in Table 1.1 below. These charges exclude additional charges in the:

- Border valley to recover costs associated with the BRC, and
- Murray and Murrumbidgee valleys to recover costs associated with the MDBA.

**Table 1.1 WaterNSW bulk water draft entitlement charges by valley ($/ML of entitlement, $2016-17) – without inflation**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| **High security entitlement charge** | | | | | | |
| Border | 6.90 | 5.17 | 5.17 | 5.17 | 5.17 | -25.1% |
| Gwydir | 14.13 | 10.25 | 10.25 | 10.25 | 10.25 | -27.5% |
| Namoi | 17.29 | 15.52 | 15.52 | 15.52 | 15.52 | -10.2% |
| Peel | 35.27 | 20.77 | 20.77 | 20.77 | 20.77 | -41.1% |
| Lachlan | 16.48 | 15.26 | 15.26 | 15.26 | 15.26 | -7.4% |
| Macquarie | 16.17 | 11.75 | 11.75 | 11.75 | 11.75 | -27.4% |
| Murray | 1.79 | 1.92 | 1.92 | 1.92 | 1.92 | 7.7% |
| Murrumbidgee | 3.08 | 2.95 | 2.95 | 2.96 | 2.96 | -3.9% |
| Lowbidgee | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| North Coast | 9.54 | 9.54 | 9.54 | 9.54 | 9.54 | 0.0% |
| Hunter | 26.03 | 13.02 | 13.02 | 13.02 | 13.02 | -50.0% |
| South Coast | 21.12 | 18.26 | 18.26 | 18.26 | 18.26 | -13.6% |
| **General security entitlement charge** | | | | | | |
| Border | 2.43 | 2.51 | 2.52 | 2.53 | 2.55 | 4.9% |
| Gwydir | 3.47 | 4.37 | 4.40 | 4.42 | 4.44 | 27.9% |
| Namoi | 8.25 | 9.78 | 9.84 | 9.89 | 9.94 | 20.6% |
| Peel | 3.88 | 2.73 | 2.73 | 2.73 | 2.73 | -29.5% |
| Lachlan | 3.28 | 3.55 | 3.57 | 3.59 | 3.61 | 10.1% |
| Macquarie | 3.62 | 3.34 | 3.36 | 3.38 | 3.39 | -6.3% |
| Murray | 0.97 | 0.88 | 0.88 | 0.88 | 0.89 | -8.6% |
| Murrumbidgee | 1.26 | 1.22 | 1.22 | 1.22 | 1.22 | -3.0% |
| Lowbidgee | 0.84 | 0.64 | 0.64 | 0.64 | 0.64 | -23.6% |
| North Coast | 7.25 | 7.25 | 7.25 | 7.25 | 7.25 | 0.0% |
| Hunter | 8.86 | 10.15 | 10.15 | 10.15 | 10.15 | 14.6% |
| South Coast | 10.09 | 10.61 | 10.61 | 10.61 | 10.61 | 5.1% |

**Note:** Prices exclude MDBA and BRC costs for the Border, Murray and Murrumbidgee valleys.

**Source:** IPART analysis.

Whilst compared to current charges most charges are falling, our draft entitlement charges for high security customers have typically decreased more than those for general security customers. This relative change is driven by:

- our updates to the high security premium,

- an increase in general security entitlement charges in some valleys to return the unders and overs mechanism (UOM) balance to zero, and
- the inclusion of a volatility allowance in general security entitlement charges.

The high security premium is incorporated into the calculation of high security entitlement charges, and represents the relative benefit of holding a high security over a general security entitlement. Our decision to update a parameter in the high security premium (ie, security/conversion factor), has significantly reduced the high security premium in the Hunter valley. This has resulted in a 50% reduction in high security entitlement charges in the Hunter valley. In turn, this has increased the general security entitlement charge by about 15% in this valley. A similar, albeit relatively smaller, reduction in the high security premium has occurred in the Gwydir, Macquarie and South Coast valleys.

As discussed in Chapter 12, we have frozen prices in real terms in the North Coast valley.

### 1.4.2 Usage charges are falling in most valleys

Our draft decisions on usage charges are set out in Table 1.2 below. These exclude MDBA and BRC charges, which are set out in section 1.4.3.

**Table 1.2 WaterNSW bulk water draft usage charges by valley ($/ML, $2016-17) – without inflation**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| Border | 6.60 | 5.28 | 5.28 | 5.28 | 5.28 | -19.9% |
| Gwydir | 12.13 | 11.00 | 11.00 | 11.00 | 11.00 | -9.3% |
| Namoi | 20.26 | 18.12 | 18.12 | 18.12 | 18.12 | -10.6% |
| Peel | 58.26 | 54.97 | 54.97 | 54.97 | 54.97 | -5.6% |
| Lachlan | 21.12 | 18.20 | 18.20 | 18.20 | 18.20 | -13.8% |
| Macquarie | 16.97 | 11.98 | 11.98 | 11.98 | 11.98 | -29.4% |
| Murray | 2.31 | 2.00 | 2.00 | 2.00 | 2.00 | -13.7% |
| Murrumbidgee | 3.53 | 3.24 | 3.24 | 3.24 | 3.24 | -8.2% |
| Lowbidgee | 0.00 | 2.09 | 2.09 | 2.09 | 2.09 | |
| North Coast | 45.04 | 45.04 | 45.04 | 45.04 | 45.04 | 0.0% |
| Hunter | 14.77 | 12.49 | 12.49 | 12.49 | 12.49 | -15.5% |
| South Coast | 40.38 | 42.08 | 42.08 | 42.08 | 42.08 | 4.2% |

**Note:** Prices exclude MDBA and BRC costs for the Border, Murray and Murrumbidgee valleys.

**Source:** IPART analysis.

Usage charges are falling in all valleys, except in the South Coast and Lowbidgee valleys. The largest reductions occur in the Macquarie (due to significantly lower costs, particularly operating expenditure), Border and Hunter valleys.

In the South Coast, we have allowed for a small increase in usage charges following our draft decision on customer capacity to pay. In the Lowbidgee valley, we moved from a 100% fixed to 80:20 fixed to variable tariff structure, and hence introduced a usage charge where there was previously no usage charge.

### 1.4.3 BRC and MDBA entitlement charges are increasing and usage charges decreasing

As mentioned above, our draft decision on efficient MDBA and BRC costs was to reduce WaterNSW's proposed costs by 1.25% per annum, compounding. However, despite this, MDBA and BRC costs are increasing. Table 1.3 and Table 1.4 below set out our draft MDBA and BRC entitlement charges and usage charges, respectively.

**Table 1.3 MDBA and BRC draft entitlement charges by valley ($/ML, $2016-17) – without inflation**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| **High security MDBA/BRC entitlement charge** | | | | | | |
| Border | 4.22 | 5.96 | 5.96 | 5.96 | 5.96 | 41.2% |
| Murray | 3.22 | 8.68 | 8.68 | 8.68 | 8.68 | 169.8% |
| Murrumbidgee | 0.72 | 1.64 | 1.64 | 1.64 | 1.64 | 129.3% |
| **General security MDBA/BRC entitlement charge** | | | | | | |
| Border | 1.49 | 2.21 | 2.21 | 2.21 | 2.21 | 49.1% |
| Murray | 1.74 | 3.54 | 3.54 | 3.54 | 3.54 | 103.1% |
| Murrumbidgee | 0.29 | 0.62 | 0.62 | 0.62 | 0.62 | 110.9% |

**Source:** IPART analysis.

**Table 1.4 MDBA and BRC draft usage charges by valley ($/ML, $2016-17) – without inflation**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| Border | 4.03 | 1.01 | 1.01 | 1.01 | 1.01 | -74.9% |
| Murray | 4.17 | 1.56 | 1.56 | 1.56 | 1.56 | -62.5% |
| Murrumbidgee | 0.82 | 0.31 | 0.31 | 0.31 | 0.31 | -63.0% |

**Source:** IPART analysis.

As discussed above, our draft decision is to change the MDBA and BRC tariff structure from 40:60 to 80:20 fixed to variable to be more cost-reflective. This means that entitlement charges would increase and usage charges would decrease. The large increases in entitlement charges are also driven by the substantially larger MDBA costs and (for high security licence holders in the Murray valley) updates to the high security premium in the Murray valley.

MDBA and BRC charges are discussed in more detail in Chapter 8 and Chapter 11.

### 1.4.4 Fish River Water Supply Scheme (FRWS) would change to an 80:20 structure

Our draft decision is to set the tariff structure so that about 80% of revenue is received from fixed charges and 20% of revenue from usage charges, for the FRWS as a whole.[13] This better reflects WaterNSW's cost structure in the FRWS. Similar to MDBA and BRC charges, this shift means that the fixed Minimum Annual Quantity (MAQ) charges are rising and the

13 Currently, FRWS prices are set on a 57:43 fixed to variable tariff structure.

usage charges are falling for all customers. The customer share of costs in the FRWS is falling by around 20%.

Our draft pricing decisions for customers in the FRWS are set out in Table 1.5 below.

**Table 1.5 Draft decision on prices for the FRWS ($2016-17) – without inflation**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Change 2017-21 | % increase 2017-21 |
|---|---|---|---|---|---|---|---|
| **Bulk Raw Water** | | | | | | | |
| **Minimum Annual Quantity (MAQ) ($/kL)** | | | | | | | |
| Major customers | 0.38[a] | 0.41 | 0.41 | 0.41 | 0.41 | 0.03 | 9.0% |
| Minor customers | 0.36 | 0.41 | 0.41 | 0.41 | 0.41 | 0.06 | 16.2% |
| **Usage up to MAQ ($/kL)** | | | | | | | |
| Major customers | 0.43[a] | 0.26 | 0.26 | 0.26 | 0.26 | -0.17 | -39.5% |
| Minor customers | 0.42 | 0.26 | 0.26 | 0.26 | 0.26 | -0.16 | -37.9% |
| **Usage in excess of MAQ ($/kL)** | | | | | | | |
| Major customers | 0.81 | 0.67 | 0.67 | 0.67 | 0.67 | -0.14 | -16.8% |
| Minor customers | 0.78 | 0.67 | 0.67 | 0.67 | 0.67 | -0.10 | -13.0% |
| **Bulk Filtered Water** | | | | | | | |
| **Minimum Annual Quantity (MAQ) ($/kL)** | | | | | | | |
| Major customers | 0.57 | 0.67 | 0.68 | 0.68 | 0.68 | 0.11 | 18.7% |
| Minor customers | 0.69 | 0.82 | 0.82 | 0.82 | 0.82 | 0.13 | 18.9% |
| **Usage up to MAQ ($/kL)** | | | | | | | |
| Major customers | 0.61 | 0.38 | 0.38 | 0.38 | 0.38 | -0.23 | -37.9% |
| Minor customers | 0.78 | 0.49 | 0.49 | 0.49 | 0.49 | -0.30 | -37.9% |
| **Usage in excess of MAQ ($/kL)** | | | | | | | |
| Major customers | 1.18 | 1.05 | 1.05 | 1.05 | 1.06 | -0.12 | -10.6% |
| Minor customers | 1.47 | 1.30 | 1.30 | 1.30 | 1.31 | -0.17 | -11.3% |

**a** In 2016-17, Energy Australia had the same price as the minor customers.

**Note:** WaterNSW currently has three major raw water customers – Energy Australia, WaterNSW (Greater Sydney) and Oberon Council. WaterNSW currently has only one major filtered water customer – Lithgow Council. Minor customers are individual minor customers.

**Source:** IPART analysis.

## 1.5 IPART's review process

We will consider all submissions received on the Draft Report and Draft Determination prior to releasing the Final Report and Determination in June 2017. We are conducting a public hearing in Sydney in April 2017 on our Draft Report and Draft Determination.

The indicative timetable for this review is outlined in Table 1.6 below.

**Table 1.6 Indicative review timetable**

| Task | Timeframe |
|---|---|
| Received pricing proposal from WaterNSW | 30 June 2016 |
| Released Issues Paper | 13 September 2016 |
| Received submissions to the Issues Paper and to Sydney Water's pricing proposal | 17 October 2016 |
| Held Public Hearings | |
| - Moree | 31 October 2016 |
| - Sydney | 8 November 2016 |
| - Coleambally | 14 November 2016 |
| Released Draft Report and Draft Determination | 14 March 2017 |
| Public Hearing – Sydney | 4 April 2017 |
| Receive submissions to the Draft Report | 17 April 2017 |
| Release Final Report and Determination | June 2017 |

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

In making our draft decisions, we have considered the matters listed under section 15 of the IPART Act (see Appendix A), and the Water Charge (Infrastructure) Rules 2010. As part of our review process, we have undertaken an extensive investigation and public consultation, including:

- inviting WaterNSW to make a pricing proposal in June 2016 detailing its prices, financial and performance data, and the future capital and operating expenditure necessary to maintain service levels and respond to regulatory demands
- released an Issues Paper in September 2016 to respond to WaterNSW's pricing proposal and assist stakeholders to identify and understand the key issues for review
- invited stakeholders to make submissions on the Issues Paper and WaterNSW's proposal by October 2016[14]
- held three public hearings in October and November 2016 to discuss a wide range of issues raised by WaterNSW and other stakeholders
- engaged independent consultants to review:
  - WaterNSW's capital expenditure, asset planning and operating expenditure proposals – Aither Consulting, in association with Oakley Greenwood, WSP|Parsons Brinckerhoff and Australian Dams and Water Consultants (Aither)[15]
  - WaterNSW's proposed costs associated with payments related to the MDBA and BRC – Aither Consulting[16]
  - cost shares between water access licence holders (customers) and the NSW government – Frontier Economics (Frontier)[17]
  - principles for setting prices in valleys below full cost recovery – Aither Consulting[18]

14 A total of 28 written submissions were received from other interested parties.
15 Aither's final report was received in December 2016 and published on our website in March 2017.
16 Aither's final report was received in January 2017 and published on our website in March 2017.
17 Frontier's final report was received in December 2016 and published on our website in March 2017.
18 Aither's final report was received in November 2016 and published on our website in March 2017.

  - customers' capacity to pay in the North Coast and South Coast valleys - Agripath Pty Ltd.
- released this Draft Report and Draft Determination and invited stakeholders to make submissions in response to the drafts.

Our Issues Paper, stakeholder submissions, the transcript from the public hearings, and consultants' reports are available on our website (www.ipart.nsw.gov.au).

## 1.6 Structure of this report

The remainder of this Draft Report is structured around the key steps of our approach (see section 2.2) as follows:

- Chapter 2 sets out the context and IPART's approach to the review.
- Chapter 3 sets out the length of the regulatory period and the form of regulation to apply to WaterNSW over the 2017 determination period.
- Chapter 4 outlines WaterNSW's revenue requirements (or 'building block' costs) and the customer share of this revenue requirement over the determination period.
- Chapters 5 to 8 set out the cost items or components that we used to calculate WaterNSW's revenue requirements.
- Chapter 9 set out the sharing of WaterNSW's revenue requirements between customers and the NSW Government for the 2017 determination period and beyond.
- Chapter 10 outlines the forecasts of entitlements and usage volumes used to calculate maximum prices.
- Chapter 11 sets out the structure of prices for WaterNSW services, including the High Security premiums.
- Chapter 12 and 13 set out the level of the maximum prices and miscellaneous charges for WaterNSW services.
- Chapter 14 assesses the implications of our pricing decisions, in particular, on customers and WaterNSW.

## 1.7 List of draft decisions and comments sought

Our draft decisions and any questions we are seeking comments on are outlined in the chapters of this Draft Report. For convenience, they are also listed below. We invite comments on any or all of these draft decisions and questions or any other matter relevant to our review.

Form of regulation

1 To adopt a 4-year determination period from 1 July 2017 to 30 June 2021 for all valleys. 31

2 To use the approach outlined in Appendix C to undertake annual price reviews for WaterNSW's MDB valleys and rural customers in the FRWS, following applications by WaterNSW. 32

3 Not to undertake annual reviews of WaterNSW's prices in the Coastal valleys. 32

4 To set price caps. 32

5 To establish an efficiency carryover mechanism and apply it at WaterNSW's 2021 price review. This mechanism: 33

- applies to controllable operating expenditure 33
- is designed to apply to four years of historical expenditure but, in the first instance when applied at the next price review in 2020-21, would apply to three years of historical expenditure: 2017-18, 2018-19, and 2019-20. 33
- ensures the business is able to retain permanent cost reductions for four years before they are passed on to customers through lower prices, and 33
- allows the business to retain temporary over and under spends. 33

Revenue requirement

6 To set WaterNSW's total NRR at $426.3 million over the 2017 determination period as set out in Table 4.1. 39

7 To set WaterNSW's customer share of notional revenue requirement ($285.4 million) and target revenue from water prices ($279.9 million) over the 2017 determination as set out in Table 4.3. 40

Operating expenditure allowance

8 To set the efficient level of WaterNSW's operating expenditure as shown in Table 5.1. 43

Capital expenditure

9 To set the level of WaterNSW's capital expenditure to be included in the RAB as: 52

- actual capital expenditure for Murray-Darling Basin valleys over the 2014-15 to 2016-17 period, excluding $1.62 million on fishway offset expenditure in 2016-17, as set out in Table 6.1. 52
- actual capital expenditure for Coastal valleys over the 2010-11 to 2016-17 period, as set out in Table 6.2, and 52
- IPART's draft finding on forecast prudent and efficient capital expenditure for all valleys over the 2017 determination period, as set out in Table 6.3. 52

10 To require WaterNSW to report on the output measures outlined in Appendix B. 52

Allowance for return on assets, regulatory depreciation and tax obligations

11 To set WaterNSW's opening Regulatory Asset Base (RAB) for its rural operations at the commencement of the determination period (1 July 2017) at $783.8 million (Table 7.1). 62

12 To deduct the regulatory value of actual and forecast asset disposals from the RAB, where the regulatory value is determined as: 65

– for significant sales of assets purchased before the RAB line-in-the-sand: asset sales revenue x RAB/DRC at the time the RAB was established 65

– for significant sales of assets purchased post RAB line-in-the-sand: purchase price + capital expenditure – depreciation + indexation 65

– for significant asset write-offs: determined on a case-by-case basis 65

– for non-significant write-offs: zero unless determined by exception on a case-by-case basis, and 65

– for non-significant asset sales: receipts from asset sales. 65

13 To adopt WaterNSW's reported figure of zero historical asset disposals for the previous determination periods for Coastal and MDB valleys. 65

14 To adopt WaterNSW's forecast asset disposals as outlined below in Table 7.5. 65

15 To apply a real post-tax WACC of 3.4% to calculate the return on WaterNSW's assets for MDB valleys. 67

16 To apply a real post-tax WACC of 4.9% to calculate the return on WaterNSW's assets for Coastal valleys. 67

17 To set an allowance for return on assets of $116.8 million over the 2017 determination period, as shown in Table 7.6. 67

18 To set an allowance for return on working capital at $0.86 million over the 2017 determination period. 67

19 To use: 70

– a straight-line depreciation method for the 2017 determination period 70

– for existing assets, the rolled forward asset lives from IPART's 2010 determination and the ACCC's 2014 determination, as outlined in Table 7.9 70

– for new assets, the asset lives listed in Table 7.11. 70

20 To set WaterNSW's allowance for regulatory depreciation at $64.3 million over the 2017 determination period (Table 7.12). 70

21 To adopt the regulatory tax allowance as set out in Table 7.13. 73

Other costs

22 To: 76

– apply a 1.25% per annum, compounded, efficiency factor to proposed BRC and MDBA costs to be passed through to customers in the Border, Murray and Murrumbidgee valleys (see Table 8.1) 76

– discontinue the Unders and Overs Mechanism for MDBA and BRC costs and smooth recovery of the current balance over the 2017 determination period 76

23 To discontinue the UOM. 80

24 With the exception of the Fish River Water Supply Scheme (FRWS), to pay out the balance of the UOM, with prices in each valley including a return on the outstanding balance, and a partial return of the remaining balance each year. 80

25 To set the UOM balance attributable to the Wallerawang power station component of the FRWS to zero. 80

26 To include a revenue volatility allowance in entitlement charges (totalling $0.765 million per year) for valleys that are at cost recovery and have a fixed to variable price ratio that is less than 80:20. 84

Sharing of WaterNSW's revenue requirements

27 To maintain the current customer share ratios as shown in Table 9.1 for the 2017 determination period, consistent with WaterNSW's proposal. 92

Forecast entitlement and usage volumes

28 To accept WaterNSW's proposal and set the entitlement volumes for the MDB and Coastal valleys as shown in Table 10.1, subject to annual review for 2018-19 onwards for the MDB valleys. 98

29 To forecast usage volumes for each year of the 2017 determination period using a simple: 101

- 20-year moving average of actual, historical usage for MDB valleys (with the exception of Lowbidgee), commencing with using average usage over 1996-97 to 2015-16 to forecast extraction volumes for 2017-18 101
- moving average of actual, historical usage for Lowbidgee, commencing with using average usage over the year period of 2012-13 to 2015-16 to forecast extraction volumes for 2017-18 101
- 20-year average of actual, historical usage for Hunter valley, using average usage over 1996-97 to 2015-16 101
- 12-year average of actual, historical usage for North Coast and South Coast valleys, using average usage over 2004-05 to 2015-16. 101

30 To set the minimum annual quantities (MAQs) as shown in Table 10.5 for the FRWS. 105

31 To forecast usage volumes using a simple: 107

- 20-year moving average of actual, historical usage for all customers in the FRWS, except EnergyAustralia, as shown in Table 10.7 107
- moving average of actual, historical usage for Mt Piper power station for EnergyAustralia, from 2012-13 to 2015-16 to forecast usage volumes for 2017-18. 107

Tariff structures

32 To set the fixed to variable price structures for each valley as set out in Table 11.1. 110

33 To: 115

– maintain the existing approach to calculating the high security premium, and 115

– update the security and reliability factors as shown in Table 11.5 115

34 To: 119

– recover customers' share of MDBA and BRC costs through an 80:20 fixed to variable MDBA/BRC tariff structure 119

– apply the high security premiums as set out in Table 11.6 for the Border, Murray and Murrumbidgee valleys to MDBA and BRC charges. 119

35 To apply a price structure which is approximately 80:20 fixed to variable for the Fish River Water Supply Scheme. 121

Bulk water prices

36 To set high security and general security entitlement charges as listed in Table 12.1, Table 12.2 and Table 12.3. 123

37 To set usage charges as listed in Table 12.4, Table 12.5 and Table 12.6. 127

38 To maintain levying usage charges on customers trading water allocation (also known as a 'temporary trade') to persons who do not hold a NSW water access licence with an associated water supply works and complying metering (eg, for interstate trades), to recover the prudent and efficient infrastructure costs WaterNSW incurs in holding and releasing bulk water when it is traded out of NSW. 127

39 To set prices for the FRWS as shown in Table 12.7. 132

40 Not to set prices based on full cost recovery (FCR) of the notional revenue requirement in valleys substantially below FCR, ie, in the North Coast and South Coast valleys. 133

41 To set prices in valleys substantially below full cost recovery, ie, in the North Coast and South Coast valleys, using a new methodology. Under this new approach prices would be set within the efficient pricing band for each of these valleys, where the efficient pricing band lies between: 133

– an upper limit that represents an irrigation customer's capacity to pay for WaterNSW's services 134

– a lower limit that represents the cost that WaterNSW would avoid if it did not have to supply those services to that customer. 134

42 To set prices for the 2017 Determination for the: 134

– North Coast valley slightly below the smoothed mid-point (weighted based on forecast volume of entitlements) of the efficient pricing band for this valley by freezing prices at the current 2016-17 price level in real terms over the 2017 determination period, as listed in Table 12.11 134

– South Coast based on the smoothed mid-point (weighted based on forecast volume of entitlements) of the efficient pricing band for this valley, as listed in Table 12.12. 134

43 To set a maximum per annum Yanco Creek levy of $0.90 per ML ($ nominal) for users in the Yanco Columbo system. 146

Miscellaneous charges and ICD discounts

44 To set draft prices for meter service charges as listed in Table 13.1. 148

45 To maintain our current approach to recovering meter reading and water use assessment costs, ie, through bulk water charges as opposed to setting a separate charge. 151

46 To set the trade processing charge as listed in Table 13.4, as a single, fixed charge. 152

47 To set the environmental gauging station charge at $11,735 per year. 153

48 To set charges for meter accuracy testing as listed in Table 13.7. 155

49 To set draft prices for the: 157

– Fish River Water Supply connection charge based on the complexity of the connection service, as listed in Table 13.9. 157

– Fish River Water Supply disconnection charge as listed in Table 13.10. 157

50 Not to regulate WaterNSW's credit card payment fees. 159

51 To set the value of rebates provided to eight irrigation corporations and districts (ICDs) as shown in Table 13.12. 160

IPART also seeks comment on:

1 To apply an 80:20 fixed to variable price structure to a valley, would 100% of customers in that valley need to express written support for the change, or would a majority suffice? If a majority would suffice, then would a majority be based on number of customers or the volume of entitlements in that valley? If based on entitlements, should HS entitlements receive greater weight? Or 90

2 Would it be reasonable to apply an 80:20 fixed to variable price structure if all the members of a Customer Service Committee (CSC) for the valley were in support, or would majority support be sufficient? Under this, we would expect that all customers in the valley would at least need to be informed of the potential change. 90

3 Are there any other considerations that IPART should be mindful of? 90

# 2 Overview of our approach

In this review, we will set prices to apply from 1 July 2017 (the 2017 Determination) for WaterNSW's monopoly rural bulk water services.

WaterNSW (formerly State Water) delivers bulk water to irrigators and other licence holders on regulated rivers across NSW.[19] We regulate WaterNSW's prices for its rural bulk water services, which relate primarily to storing and delivering water to entitlement holders in 13 valleys across NSW. We also regulate its meter service charges and other 'miscellaneous' charges that are set on a fee for service basis.

This Draft Report sets out our draft decisions on WaterNSW's regulated charges[20] and maximum prices[21] for these services over the 4-year period from 1 July 2017 to 30 June 2021 (the 2017 determination period) and how these would affect WaterNSW's customers. It also explains how we reached these draft decisions and how our draft prices compare to WaterNSW's proposed prices.

This chapter outlines how we have approached this review and provides background information on the regulatory framework and our role as a regulator.

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

We received WaterNSW's pricing proposal on 30 June 2016. We then released our Issues Paper on 13 September 2016. We have received a number of submissions in response to this Issues Paper and WaterNSW's pricing proposal. We have also held three public hearings to provide an opportunity for stakeholders to present their views – in Moree, Sydney and Coleambally.

We have considered all stakeholder submissions when formulating our Draft Determination and Draft Report.

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

## 2.1 WaterNSW's operating and regulatory framework

The sections below provide an overview of WaterNSW's services, customers and regulatory framework.

19 A regulated river is one where downstream flows are regulated by a major storage or dam to supply irrigation water. Department of Primary Industries – Water, *Regulated rivers*, http://www.water.nsw.gov.au/water-management/monitoring/regulated-rivers, accessed 16 February 2017.

20 Determined under the *Water Charge (Infrastructure) Rules 2010* (Cth).

21 Determined under the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW).

### 2.1.1 WaterNSW's services and customers

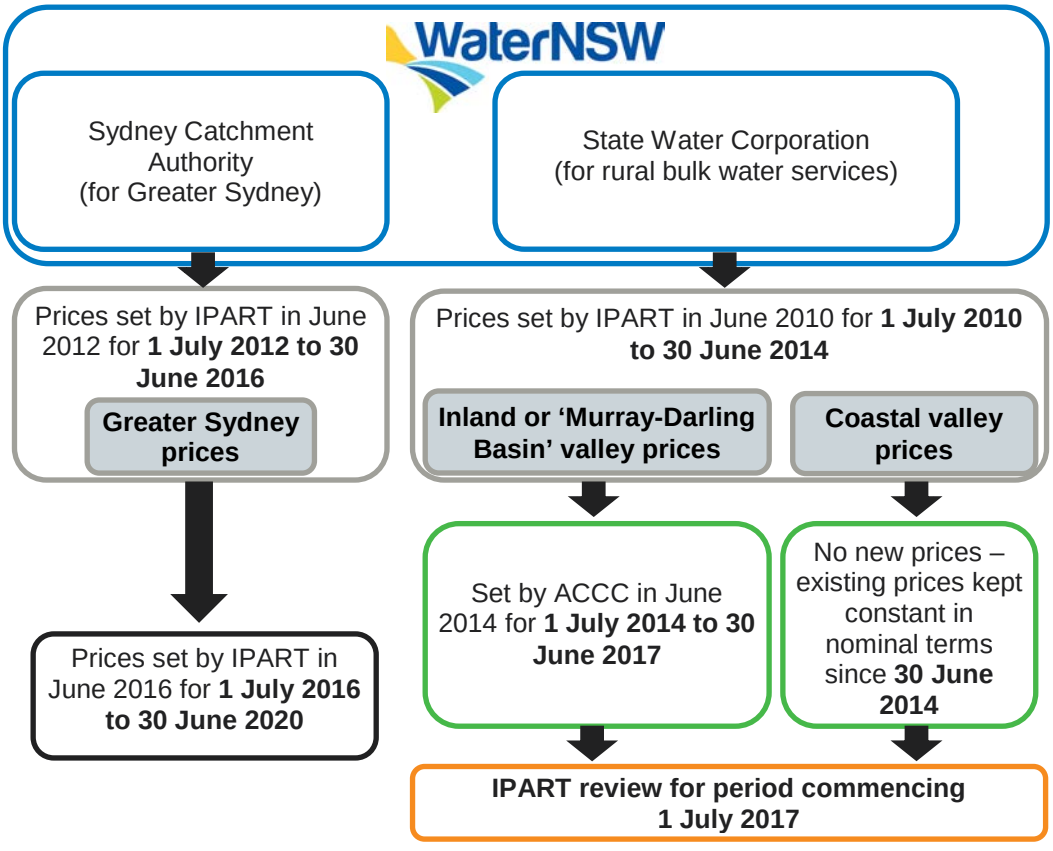
Our pricing functions for WaterNSW are contained in the *Water Charge (Infrastructure) Rules 2010* (Cth) (the WCIR) and the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW) (IPART Act). We start our review by making a decision on the scope of rural bulk water monopoly services provided by WaterNSW which are subject to our pricing functions (monopoly services). This section summarises WaterNSW's monopoly services.

WaterNSW was formed on 1 January 2015 under the *Water NSW Act 2014* (NSW) (the Act). The Act provided for the former State Water Corporation to become WaterNSW. It also abolished the former Sydney Catchment Authority and transferred its functions to WaterNSW.

WaterNSW supplies raw water to, and develops and delivers raw water infrastructure solutions for, rural NSW and the Greater Sydney area.[22] This price review applies to services provided by WaterNSW to its rural customers (ie, the former State Water Corporation component of WaterNSW). We recently completed a review for WaterNSW's prices for services provided to the Greater Sydney area (ie, the former Sydney Catchment Authority component of WaterNSW).[23] These prices took effect from 1 July 2016.

Figure 2.1 outlines the sequence of pricing reviews for WaterNSW's rural bulk water services and its Greater Sydney bulk water services.

**Figure 2.1 WaterNSW's price regulation regime**




22 WaterNSW, *WaterNSW Annual Report 2015-16*, 2016, p 6.
23 IPART, *Review of prices for WaterNSW: From 1 July 2016 to 30 June 2020 - Final Report*, June 2016.

In rural NSW, WaterNSW maintains, manages and operates major infrastructure to deliver bulk water to licensed water users on the State's regulated rivers. There are about 6,300 customers in 14 regulated river systems. WaterNSW owns and operates 20 dams and more than 280 weirs and regulators to deliver water for town water supplies, industry, irrigation, stock and domestic use, riparian and environmental flows. It provides services to various customers including irrigation corporations, country town water supply authorities, farms, mines and electricity generators.[24]

The scope of WaterNSW's services has evolved over time, as has the type of users of these services and the nature of their use. The roles and responsibilities of WaterNSW are prescribed by the *Water NSW Act 2014*. Under section 6 of the Act, WaterNSW is required to meet the following primary objectives:[25]

- 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 under the Act, 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.[26]

WaterNSW provides services in the Murray-Darling Basin (MDB) and Coastal valleys. WaterNSW is also responsible for the Fish River Water Supply Scheme (Fish River Scheme), which sources water from Oberon Dam and supplies bulk water to four major customers (EnergyAustralia, Lithgow City Council, Oberon Council and WaterNSW Greater Sydney) and approximately 280 smaller customers.[27]

WaterNSW also recovers a portion of the NSW Government's contributions to the Murray-Darling Basin Authority (MDBA) and the Border Rivers Commission (BRC) through its water prices. The MDBA and the BRC have responsibility for coordinating and managing water resource management activities as well as water storage and delivery-related activities where the issues involve more than one state, with the costs of managing and maintaining assets under these arrangements jointly paid for by the signatory states.

Our Draft Determination sets WaterNSW's proposed bulk water charges for its monopoly services including for:

24 WaterNSW pricing proposal to IPART, June 2016, pp 10-12.
25 *Water NSW Act 2014*, section 6.
26 *Water NSW Act 2014*, section 6.
27 WaterNSW pricing proposal to IPART, June 2016, p 11.

- **water charges**, for the storage and delivery of water on regulated rivers, which:
  - are set on a valley basis
  - are generally comprised of two-part tariffs: $ per ML of water entitlement and $ per ML of water taken
  - for some valleys (ie, Border, Murray and Murrumbidgee), include the addition of MDBA and BRC costs, and
- **miscellaneous charges**, to recover the cost of non-routine services. These are discussed in detail in Chapter 13. They include **meter service charges**, which WaterNSW may levy on users of WaterNSW-owned meters on regulated rivers, to recover the costs of maintenance and administration related to WaterNSW-owned meters.

### Regulatory framework

WaterNSW operates under the *Water NSW Act 2014*, which defines its functions and objectives. WaterNSW must also comply with the terms of its operating licence, which contains performance standards, reporting obligations and requirements imposed by relevant legislation.[28]

IPART is responsible for regulating the prices of Water NSW's rural bulk water services. However, at present, it does so under two distinct legislative and regulatory frameworks:

- IPART has determined regulated charges for WaterNSW's bulk water services supplied in the Murray-Darling Basin (MDB) valleys, and to rural customers in the Fish River Scheme[29] under the *Water Charge (Infrastructure) Rules 2010* (the WCIR)[30], and
- IPART has also determined maximum prices for WaterNSW's bulk water services supplied in the three Coastal valleys and urban customers in the Fish River Scheme[31] under section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992 (NSW)* (IPART Act).

### Murray-Darling Basin valleys

The prices of WaterNSW's bulk water services supplied in the MDB valleys, as well as rural customers in the Fish River Scheme are regulated under:

- the *Water Act 2007* (Cth)
- the *Water Charge (Infrastructure) Rules 2010* (WCIR) made under section 92 of the *Water Act 2007*, and
- the ACCC's *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010* of July 2011 (ACCC Pricing Principles).

28 IPART audits WaterNSW's performance annually against the terms and conditions of the licence and reports the results to the portfolio Minister.
29 Energy Australia and minor customers.
30 The WCIR was made under section 92 of the *Water Act 2007* (Cth).
31 Oberon and Lithgow City councils, and WaterNSW (Greater Sydney).

Up until 2014, IPART determined the charges that WaterNSW (then the State Water Corporation) could levy for all its monopoly services under the IPART Act. However, in July 2014 the ACCC assumed pricing responsibility under the *Water Act 2007* (Cth). The current prices for MDB valleys were established in the ACCC's 2014 Decision and updated by the ACCC in 2 annual reviews (the 2015-16 and 2016-17 annual reviews).

In September 2015, IPART was accredited by the ACCC under the WCIR to set regulated charges for WaterNSW's MDB valleys and rural customers in the Fish River Scheme. Under our accreditation conditions, we must set the regulated charges in accordance with the WCIR and the associated Pricing Principles. In particular, we must determine the regulated charges under rule 29 of the WCIR.

Under rule 29, IPART must not approve regulated charges set out in WaterNSW's pricing application unless we are satisfied that:

- WaterNSW's regulatory asset base, which is used to calculate the regulated charges, has been determined in accordance with Schedule 2 of the WCIR
- WaterNSW's total forecast revenue (from all sources) for the regulatory period is reasonably likely to meet the prudent and efficient costs of providing infrastructure services in that regulatory period, and
- the forecast revenue from regulated charges is reasonably likely to meet that part of the prudent and efficient costs of providing infrastructure services that is not met from other revenue.

If we are not satisfied of these matters, we must determine the regulated charges so as to be satisfied of them.

In determining regulated charges, IPART must have regard to whether the regulated charges would contribute to achieving the Basin Water Charging Objectives and Principles (BWCOP) of the *Water Act 2007* (Cth).[32]

The WCIR and associated Pricing Principles differ from IPART's typical approach in a number of areas. For example, under the WCIR:

- the length of the determination is fixed at four years for WaterNSW (see Chapter 4)
- the regulatory asset base (RAB) and the weighted average cost of capital (WACC) are calculated differently to our usual approach:
  - the rules for including historical capital expenditure in the RAB differ (see Chapter 6)
  - the parameters we must use in determining the WACC differ (see Chapter 7)
- after setting indicative prices over the 4-year price path, prices can be reviewed and adjusted annually to account for actual water demand and changes in forecast demand, and
- the factors we must consider when setting prices differ:
  - in setting prices for the MDB valleys, we are required to take into account the BWCOP set out in schedule 2 of the *Water Act 2007* (Cth) (see Appendix A)

32 Section 15 of the IPART Act and the BWCOP are outlined in Appendix A.

- in setting prices for the Coastal valleys (discussed below), we must have regard to the matters listed in section 15 of the IPART Act (see Appendix A).

The ACCC has recently completed a review of the WCIR[33]. As part of its review, the ACCC has proposed handing back regulatory pricing responsibilities to state-based regulators.[34] If the WCIR are amended in accordance with the ACCC's final advice, IPART would then determine WaterNSW's regulated charges for the MDB valleys and rural customers in the Fish River Scheme under the IPART Act (instead of the WCIR). However, as the WCIR have not yet been amended, our review of the regulated charges is being undertaken under the WCIR.

Our Issues Paper noted that in the event that the WCIR are amended during this price review, we would inform stakeholders and discuss any resultant changes in our Draft Report and our public hearings. However, in recognition of the uncertainty this may cause, the ACCC has proposed transitional arrangements that mean WaterNSW's prices for MDB valleys under this review will be determined under the WICR, which will continue to apply until the end of the 2017 determination period.[35]

### Coastal valleys

As part of this review, we will also determine WaterNSW's maximum prices in three Coastal valleys (the Hunter, North Coast and South Coast), as well as its prices for urban customers in the Fish River Scheme.

The pricing of bulk water services in these areas is regulated under section 11 of the IPART Act. When we determine prices under the IPART Act, we must have regard to a range of matters listed in section 15 of this Act, such as the costs of providing the services concerned, customer affordability, environmental impacts and the maintenance of customer service quality.[36]

The current maximum prices for Coastal valleys and urban customers in the Fish River Scheme were set in IPART's 2010 Determination for the former State Water Corporation. The prices set under this 2010 Determination had been scheduled to conclude on 30 June 2014. However, after requests from WaterNSW, IPART decided to defer the next review of prices in Coastal valleys until now, to align with the MDB valleys. Consequently, WaterNSW's prices for the Coastal valleys and urban customers in the Fish River Scheme have remained unchanged at 2013-14 levels in nominal terms.

## 2.2 IPART's approach to the review

While our approach to the review of the prices that WaterNSW can charge for its monopoly rural bulk water services has had to accommodate the two different regulatory frameworks

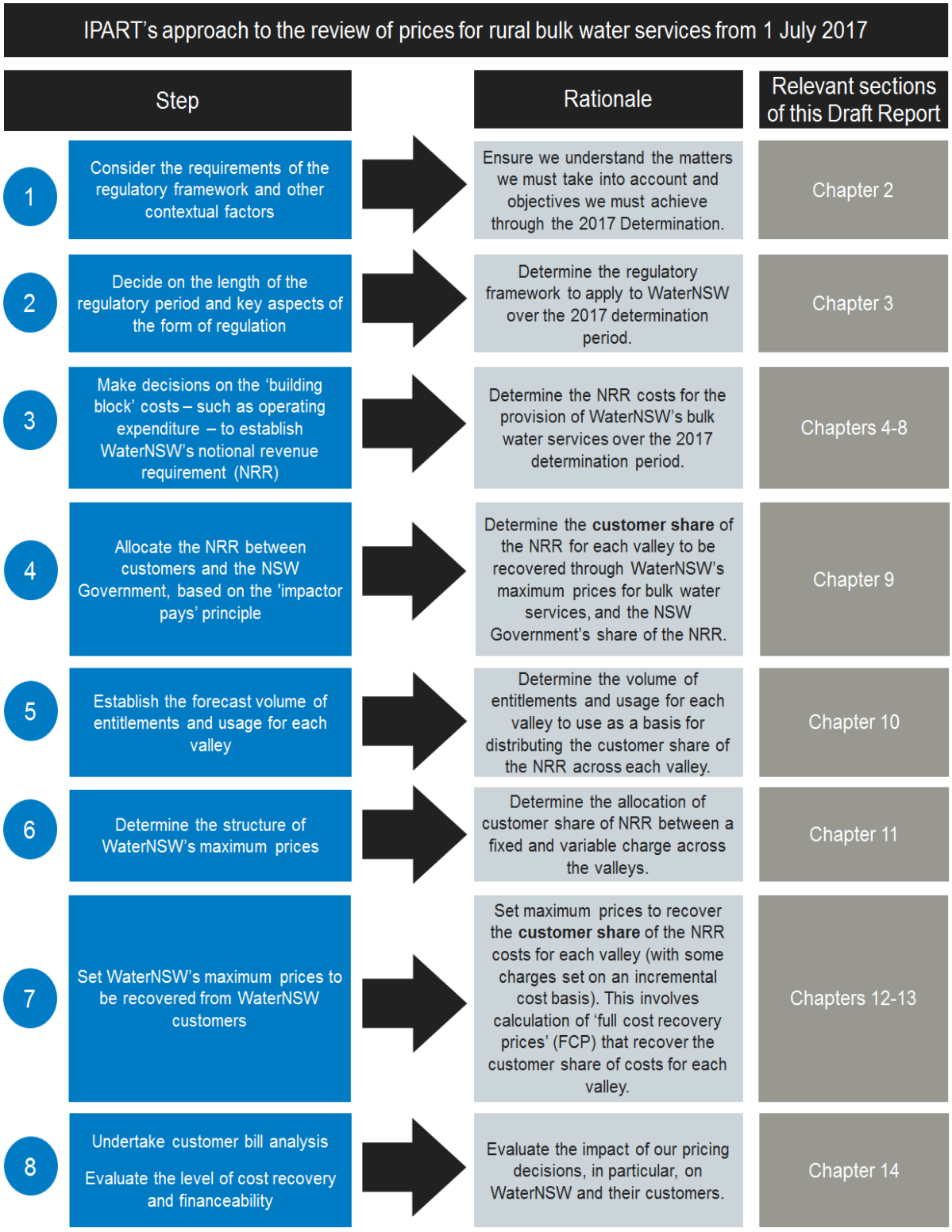
33 ACCC, *Review of Water Charge Rules Final Advice*, September 2016.
34 ACCC, *Review of Water Charge Rules Final Advice*, September 2016, p 214.
35 The transitional arrangements provide that the current accreditation arrangements should continue until the end of the latest regulatory period for which an operator's infrastructure charges had been approved or determined before the transition date; or if the operator had lodged an application but its charges had not yet been approved or determined by the transition date, until the end of the upcoming regulatory period that the application related to. ACCC, *Review of the Water Charge Rules – Final Advice*, September 2016, p 214.
36 Section 15 of the IPART Act is outlined in Appendix A.

described in section 2.1.2, the key elements of our approach are the same across all monopoly services.

Most fundamentally, we aim to set prices to allow WaterNSW to recover only water customers' share of the efficient costs of its monopoly services. Cost-reflective prices should signal to customers the costs of their consumption decisions and result in an efficient use and allocation of resources. They should also provide incentives for WaterNSW to enhance its efficiency over time.

As summarised in Figure 2.2, our approach to the review involves a sequence of eight broad steps, each of which involves making decisions on methods and key parameters.

**Figure 2.2 IPART's approach to the review of WaterNSW's prices for rural bulk water services, from 1 July 2017**



## 2.3 IPART's review process

As part of our review process, we have undertaken an extensive investigation and public consultation, including:

- inviting WaterNSW to make a pricing proposal in June 2016 detailing its proposed prices and forecast capital and operating expenditure necessary to maintain service levels and respond to regulatory demands
- releasing an Issues Paper in September 2016 to respond to WaterNSW's pricing proposal and assist stakeholders identify and to understand the key issues under review
- inviting stakeholders to make submissions on the Issues Paper and WaterNSW's proposal by October 2016
- holding public hearings in October 2016 in Moree, and in November 2016 in Sydney and Coleambally to discuss a wide range of issues raised by WaterNSW and other stakeholders
- engaging independent consultants to review and advise on key aspects of WaterNSW's proposal, including the proposed expenditure and cost sharing over the 2017 determination period, and
- releasing this Draft Report and Draft Determination and inviting stakeholders to make submissions in response to the drafts.

Our Issues Paper, stakeholder submissions, the transcript from the public hearing, and consultant's report are available on our website (www.ipart.nsw.gov.au).

Stakeholders are able to make submissions to this Draft Report. Stakeholders can also comment on our consultant reports published on our website, as part of their submission to our Draft Report.

The process and due date for making submissions is outlined on page iii of this Draft Report.

We will consider all submissions received on the Draft Report prior to releasing the Final Report and Determination in June 2017. The indicative timetable for this review is outlined in Table 2.1.

**Table 2.1 Review timetable**

| Milestone | Date |
|---|---|
| Pricing Proposal from WaterNSW received | 30 June 2016 |
| Release IPART Issues Paper | 13 September 2016 |
| Public submissions received | 17 October 2016 |
| Public Hearing – Northern NSW - Moree | 31 October 2016 |
| Public Hearing – Sydney | 8 November 2016 |
| Public Hearing – Southern NSW - Coleambally | 14 November 2016 |
| Release Draft Determination and Draft Report | 14 March 2017 |
| Public Hearing – Sydney | 4 April 2017 |
| Submissions on Draft Determination and Draft Report due | 17 April 2017 |
| Release Determination and Final Report | June 2017 |

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

We will provide further information on the public hearing scheduled for 4 April closer to the date.

Concurrent to this price review, IPART is also conducting a review of WaterNSW's operating licence, and will recommend the terms and conditions of the new operating licence to the Minister[37] in May 2017, with the new licence to apply from 1 July 2017. Information on IPART's review of WaterNSW's operating licence is available on our website.[38]

37 NSW Minister for Water.

38 https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Licensing-WaterNSW/Review-of-the-WaterNSW-operating-Licences.

# 3 Form of regulation

The form of regulation includes some overarching elements of our approach to setting prices for the 2017 Determination period. It covers the length of the determination period, the form of price control, and the incorporation of an efficiency carryover mechanism. This chapter outlines our decisions on these issues.

## 3.1 We have set a 4-year determination period

We made a draft decision:

1 To adopt a 4-year determination period from 1 July 2017 to 30 June 2021 for all valleys.

### Reasons for our draft decision

We consider it is appropriate to align the determination period for WaterNSW's MDB and Coastal valleys, and that a 4-year determination period is appropriate for all valleys (including the Fish River Water Supply (FRWS).

IPART sets regulated prices for WaterNSW's bulk water services to the MDB valleys and rural customers in the FRWS under the *Water Charge (Infrastructure) Rules 2010 (WCIR)* and ACCC Pricing Principles. Under our accreditation conditions, we must set those regulated charges in accordance with the WCIR and ACCC Pricing Principles.

According to the WCIR, we are required to set a 4-year determination period for Murray-Darling Basin (MDB) valleys and rural customers in the FRWS.[39] This requirement does not apply when we set prices for bulk water services for the Coastal valleys and urban customers in the FRWS under the IPART Act.

WaterNSW proposed the 4-year determination period for the MDB valleys and rural customers in the FRWS be extended to the Coastal valleys and urban customers in the FRWS. WaterNSW considered that aligning the determination period for all the rural valleys will allow for synergies in producing operating and capital cost forecasts, consumption forecasts and other information required by IPART.

WaterNSW considers that a four year determination period:

- offers a reasonable period to provide certainty around expenditure and/or consumption forecasts
- provides a reasonable period for passing on efficiency gains that are expected from its restructuring program (following the merger of the former State Water and the former Sydney Catchment Authority)

39 Unless IPART approves another period on application by WaterNSW under rule 24 of the WCIR.

- will achieve a reasonable balance between providing incentives to pursue efficiency gains and passing on forecast efficiency gains.
- minimises regulatory cost and provides a reasonable level of regulatory certainty.[40]

Other stakeholders that commented on the length of the Determination period generally supported aligning the determination period for all of WaterNSW's valleys and considered a 4-year determination period for all valleys appropriate.[41, 42, 43]

Given our obligations under the WCIR, stakeholder submissions and our assessment of relevant factors such as the benefits of aligning the determination period for all of the valleys, and the need for regulatory certainty and financial stability, we consider that extending the 4-year determination period to all valleys is appropriate.

### Approach to annual reviews

We made draft decisions:

2 To use the approach outlined in Appendix C to undertake annual price reviews for WaterNSW's MDB valleys and rural customers in the FRWS, following applications by WaterNSW.

3 Not to undertake annual reviews of WaterNSW's prices in the Coastal valleys.

Under the WCIR, WaterNSW must apply to IPART for annual reviews of its regulated charges.[44] Therefore, we would undertake annual price reviews of WaterNSW's MDB valleys and rural customers in the FRWS following applications by WaterNSW (see Appendix C for further detail on our approach to annual reviews).[45]

We will not undertake annual reviews of WaterNSW's prices in the Coastal valleys. Unlike the WCIR, the IPART Act does not require annual reviews. Further, we consider that the costs of undertaking annual reviews that would meet the requirements for a pricing review under the IPART Act would likely outweigh the benefits.

## 3.2 Form of price control

We made a draft decision:

4 To set price caps.

There are a number of regulatory options available to regulate prices. For this Draft Report, we have decided to maintain the current approach of setting price caps. This means that we set maximum prices. WaterNSW can charge these prices or lower.

40 WaterNSW pricing proposal to IPART, June 2016, pp 14-15.
41 Bega Valley Users Association submission to IPART Issues Paper, October 2016, p 7.
42 Gwydir Valley Irrigators Association submission to IPART Issues Paper, October 2016, p 5.
43 NSW Irrigators' Council submission to IPART Issues Paper, October 2016, p 15.
44 WCIR, Division 3.
45 The WCIR (Division 3) provide for the annual review of regulated charges for second or subsequent years of a regulatory period following an application by the infrastructure operator.

## 3.3 Efficiency carryover mechanism

In our 2016 review of prices for services provided to WaterNSW's Greater Sydney customers, we decided to implement an efficiency carryover mechanism (ECM) – which we intend to apply at WaterNSW's Greater Sydney 2020 price review. The ECM is aimed at removing the incentive for an agency to defer efficiency gains by allowing it to retain efficiency savings for a fixed period of time. In order to be consistent with our current approach, we have decided to apply an ECM for WaterNSW's services provided to its rural bulk water customers. We intend to apply the ECM at the 2021 price review.

We made a draft decision:

5 To establish an efficiency carryover mechanism and apply it at WaterNSW's 2021 price review. This mechanism:

- applies to controllable operating expenditure
- is designed to apply to four years of historical expenditure but, in the first instance when applied at the next price review in 2020-21, would apply to three years of historical expenditure: 2017-18, 2018-19, and 2019-20.
- ensures the business is able to retain permanent cost reductions for four years before they are passed on to customers through lower prices, and
- allows the business to retain temporary over and under spends.

Our intention is to apply an ECM to operating expenditure at the next price review that provides equal incentives for permanent efficiency savings (ie, permanent cost reductions) over the regulatory period.[46]

WaterNSW did not propose an ECM in its pricing proposal. It proposed to discuss this issue with its customers in the lead up to the 2021 determination, using its experience of its operation in the Greater Sydney part of its business.[47]

### 3.3.1 Reasons for decision

Our current form of regulation for WaterNSW's rural bulk water services allows the business to keep any benefits resulting from cost savings it makes during the regulatory period. This intended feature of our form of regulation is referred to as 'incentive regulation' because it provides a financial reward to incentivise businesses to deliver cost savings. Cost savings are considered beneficial because, if they are permanent, they can be passed through to customers through lower prices in subsequent regulatory periods (when the regulator re-sets prices based on its assessment of efficient costs).

A shortcoming of the current approach is that, to the extent there are opportunities to make permanent efficiency savings, the financial reward for achieving these savings deteriorates over the regulatory period. That is, a saving made in year one of the regulatory period results in four years of additional profit, whereas a saving made in year three of the regulatory period results in just two years of additional profit.

46 By 'regulatory period', we mean determination period – ie, the duration of the determination, which is usually four years.

47 WaterNSW submission to IPART Issues Paper, October 2016, p 15.

The consequence of this feature of our current form of regulation for WaterNSW's rural bulk water services is that the business can have an incentive to delay savings from the latter years of one regulatory period to the early years of the next regulatory period. Delaying efficiency savings is wasteful and it means customers have to wait longer before they benefit from lower prices (see Appendix E).

The objective of the ECM is to equalise the incentive to make permanent efficiency savings regardless of when they are made within the regulatory period. This is done by guaranteeing WaterNSW will be able to retain an efficiency saving for four years regardless of when it is made within the regulatory period.

We consider the ECM improves the form of regulation by removing the current incentive to delay cost savings from the end of one regulatory period to the beginning of the next. While the benefits of this are limited to accelerating the delivery of savings that would have occurred anyway, we consider this is still an improvement on the current regulatory framework and is in the long term interests of WaterNSW's customers.

Our ECM is asymmetric in the sense that while it equalises the incentive to achieve permanent efficiency savings over time, it preserves all other features of the current form of regulation. That is:

- Permanent cost increases are held by the business until the next price review where they are assessed by the regulator and, if determined to be efficient, passed on to customers (through price increases as a result of an increase in the business's operating expenditure allowance) – this provides an incentive for the business to avoid inefficient increases in costs.
- Temporary over and under spends are retained by the business – this provides an incentive for the business to manage within its budget.

Our ECM is the same as that we adopted in our 2016 Determination of WaterNSW's services provided to Greater Sydney customers. We intend to apply the ECM to WaterNSW's operating expenditure.

We have decided not to apply an ECM to capital expenditure. Given the additional complexity associated with introducing an ECM for capital expenditure, the additional risk of unintended consequences (ie, incentivising the business to over forecast and to inefficiently defer capital expenditure), and the limited opportunities for efficient trade-offs between operating and capital expenditure, we have decided not to introduce a capex ECM at this time.

### Application period

The ECM is designed to apply to the four years preceding its application (ie, to match the length of the determination). When the ECM is applied initially in 2020-21 as part of the next price review, the four years preceding this will be 2016-17 to 2019-20.

In the 2016 price review of WaterNSW's Greater Sydney prices, we decided not to apply the ECM to expenditure that has already taken place (ie, for this review the ECM should only include three years of expenditure from 2017-18 to 2019-20 when it is initially applied in 2020-21).

We consider that there is little point applying an incentive mechanism retrospectively to expenditure that has already taken place. We also consider that excluding 2016-17 expenditure from the initial application of the ECM would avoid the potential of double counting efficiency savings made during the previous determination period (before 2016-17).

On balance, we have decided to exclude 2016-17 expenditure from the initial application of the ECM. This means the initial application of the ECM would apply to three years of expenditure from 2017-18 to 2019-20. All subsequent applications of the ECM would apply to four years of expenditure (assuming a four year regulatory period). This is explained in detail in Appendix E.

### Implementing the ECM at future price reviews and the role of the expenditure review

The process for applying the ECM at the next price review can be described in four steps:

- Determine if WaterNSW **permanently** reduced costs below the allowance ($X).
- Determine in which year this saving was achieved (n).
- Ensure the allowance in the next regulatory period is reduced to reflect the saving = $X.
- Carryover an efficiency benefit to the next regulatory period equal to $X multiplied by (n-1) to ensure WaterNSW retains the benefit for four years.[48]

Our expression of intent to adopt an ECM as outlined above does not bind a future IPART Tribunal to adopt such a mechanism. Therefore, we cannot prevent a future Tribunal deciding to remove, amend, or replace the ECM. We acknowledge that the effectiveness of incentive mechanisms rests on the confidence businesses have in them. However, we consider this is the businesses' opportunity to respond to the improved incentives, demonstrate the value of the ECM and make a case for its continued use in the future.

A key feature of our ECM is that we retain discretion in resetting expenditure allowances at the start of each regulatory period. The role of the expenditure review is therefore maintained and we can continue to set expenditure allowances to reflect the best available information on efficient costs.

In preparation for the next price review, we will request the business populate and submit an ECM spreadsheet along with its pricing proposal. We will then use a populated ECM spreadsheet as a tool to inform the expenditure review. Our expectation is that by removing the incentive to delay savings and providing a tool for utilities to demonstrate their performance delivering efficiency savings over the regulatory period, the ECM would improve the amount and quality of information available to us at the next round of expenditure reviews.

The ECM does not remove the incentive businesses could have to underspend the allowance early in the determination and to increase spending towards the end of the determination.

48 For example, if the business makes a $10 million (X=$10m) saving in year 3 (n=3) of a 4-year regulatory period, the ECM ensures the $10 million saving is factored into the expenditure allowance of the next regulatory period and it provides a carryover benefit of $10m * (3-1) = $20 million in the next regulatory period. Adding this $20 million carryover benefit to the $20 million gained from underspending in years 3 and 4 of the first regulatory period means the total benefit to the business is $40 million (4 x $10m).

We would continue to monitor historical expenditure patterns and factor this information into our expenditure review process.

Appendix E sets out the design of the ECM in greater detail and provides worked examples showing how the ECM would be applied in various scenarios.

# 4 Revenue requirement

Following our decision on the form of regulation, we then decide on our approach to calculating WaterNSW's revenue requirement and the amount of revenue to be recovered from customers through prices. This chapter discusses our building block approach to calculating WaterNSW's notional revenue requirement (NRR), our draft decision on the level of revenue required to cover WaterNSW's efficient costs, and the customer share of revenue to be recovered through the prices that we set.

## 4.1 We use building blocks to calculate the NRR

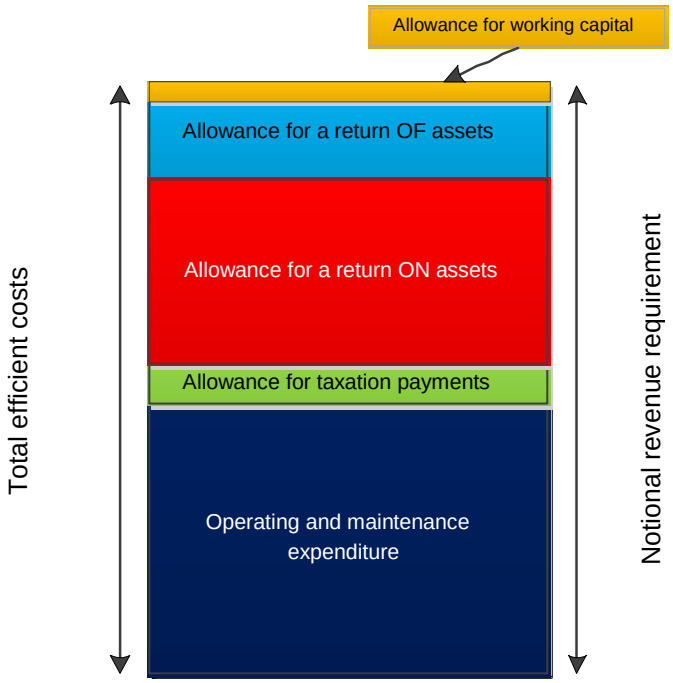
The NRR represents our view of the total efficient costs of providing WaterNSW's regulated services in each year of the determination period. In general, we set prices to recover this amount of revenue.

As in previous reviews, we used a 'building block' method to calculate WaterNSW's NRR. This method involves determining an allowance for each year of the determination period, including:

- **Operating expenditure.** This represents our estimate of the efficient level of WaterNSW's forecast operating, maintenance and administration costs (Chapter 5).
- 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, the WACC (see Chapters 6 and 7).
- 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 (Chapter 7).
- An **allowance for meeting tax obligations**. We also use the real post-tax WACC and tax depreciation to calculate an allowance for tax as a separate cost block. We consider this method accurately estimates the tax liability for a comparable commercial business (Chapter 7).
- An **allowance for working capital.** This represents the holding cost of net current assets (Chapter 7).

The sum of these allowances is the NRR (Figure 4.1).

**Figure 4.1 Building block approach to calculating NRR**




Note: The building block components of NRR in the figure above are not to scale and are for illustrative purposes only.

For this review, there are a number of additional items that make up the NRR. These items include the following:

- MDBA and BRC costs (Chapter 8)
- A revenue volatility allowance (Chapter 8)
- Costs related to the recovery of the unders and overs mechanism (UOM) balance (Chapter 8)
- Irrigation corporation and district (ICD) rebates (Chapter 13).

Once we calculated WaterNSW's NRR, we decided on the approach we would use to convert this amount into prices. This involved deciding on the appropriate **customer share** of the NRR (see Chapter 9), and then the **target revenue from water prices** for each year. The target revenue is the actual revenue we expect WaterNSW to generate from prices. In determining the target revenue, we considered a range of factors, including:

- the implications of the customer share of the notional revenue requirement on price levels, and the rate and way in which they will change
- the impact of our decisions on WaterNSW and its customers
- the appropriate approach to pricing for valleys currently below full cost recovery (North and South Coast – discussed further in Chapter 12).

Section 4.2 below summarises our decision on WaterNSW's NRR. Section 4.3 then summarises our decisions on the customer share of this NRR and the target revenue to be recovered from prices over the 2017 determination period.

## 4.2 WaterNSW's NRR

We made a draft decision:

6 To set WaterNSW's total NRR at $426.3 million over the 2017 determination period as set out in Table 4.1.

The total NRR reflects our decision on the efficient costs of delivering WaterNSW's monopoly bulk water services. It comprises both the customer share of costs and the share of costs allocated to the government.

Our draft decision is that WaterNSW's total NRR over the 2017 determination period is $426.3 million, which is $6.1 million or 1.4% lower than WaterNSW's proposed revenue requirement of $432.5 million. Table 4.1 and Figure 4.2 compare our findings on NRR with WaterNSW's proposal.

**Table 4.1 Draft decision on total notional revenue requirement ($millions, $2016-17)**

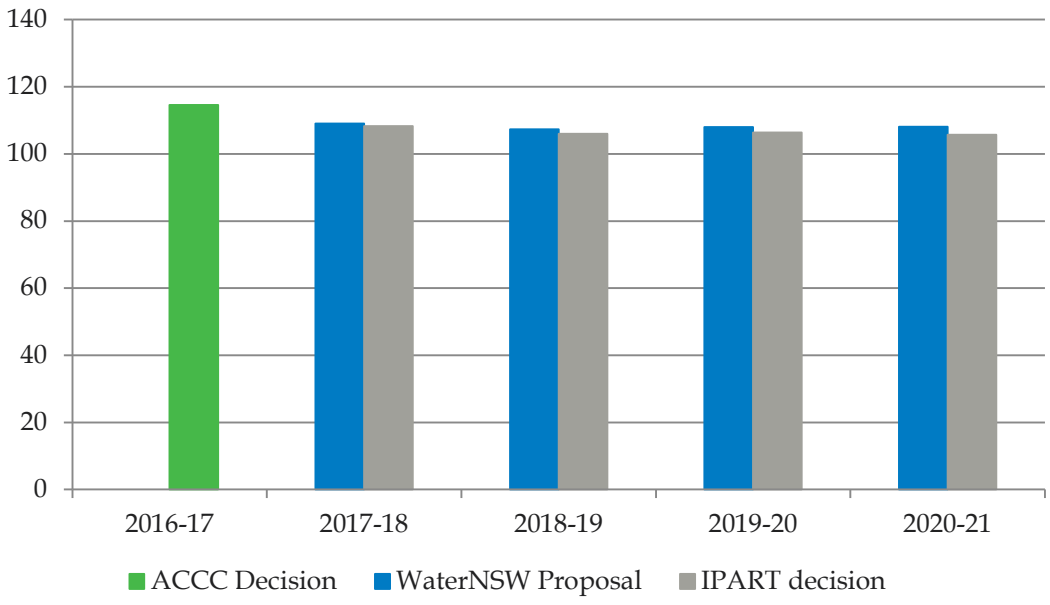
| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Total |
|---|---|---|---|---|---|---|
| WaterNSW Proposal | | 109.1 | 107.3 | 108.0 | 108.1 | 432.5 |
| Draft decision | 114.5[a] | 108.2 | 106.0 | 106.3 | 105.7 | 426.3 |
| Difference | | -0.8 | -1.3 | -1.6 | -2.4 | -6.2 |
| Difference % | | -0.8% | -1.2% | -1.5% | -2.2% | -1.4% |

**a** This figure represents the ACCC's 2016-17 decision.

**Note:** Figures include MDBA and BRC costs. Totals may not sum due to rounding.

**Source:** IPART analysis.

**Figure 4.2 Proposed and allowed NRR over the 2017 determination period ($millions, $2016-17)**




**Note:** Figures include MDBA and BRC costs.

**Source:** IPART analysis.

Table 4.2 compares each building block element of our decisions on NRR with WaterNSW's proposal. The main reasons for the differences are our decisions resulting in:

- a significant reduction in the volatility allowance (discussed in Chapter 8)
- an increase in the UOM allowance as a result of our decision to discontinue the UOM (Chapter 8)
- an increase in ICD rebates (Chapter 13)
- a decrease in the tax allowance (Chapter 7).

**Table 4.2 Proposed and allowed total NRR building blocks – total for 2017-18 to 2020-21 ($millions, $2016-17)**

| Building block | WaterNSW proposed | IPART | Difference | Difference (%) |
|---|---|---|---|---|
| Operating expenditure | 142.1 | 141.8 | -0.3 | -0.2% |
| ICD Rebates | 3.9 | 6.5 | 2.6 | 66.5% |
| Return of capital | 65.5 | 64.3 | -1.2 | -1.9% |
| Return on capital | 115.8 | 116.8 | 1.0 | 0.9% |
| Tax allowance | 5.7 | 3.5 | -2.2 | -38.7% |
| Volatility allowance | 14.5 | 3.1 | -11.4 | -78.8% |
| UOM payback | 4.6 | 11.8 | 7.2 | 157.3% |
| MDBA and BRC costs | 80.5 | 78.6 | -1.9 | -2.3% |
| Notional revenue requirement | **432.5** | **426.3** | **-6.1** | **-1.4%** |

**Note:** MDBA/BRC costs include a government share proportion. Operating expenditure includes fishways expenditure. Totals may not add due to rounding.

**Source:** IPART analysis.

## 4.3 Customer share of notional revenue requirement and target revenue

We made a draft decision:

7 To set WaterNSW's customer share of notional revenue requirement ($285.4 million) and target revenue from water prices ($279.9 million) over the 2017 determination as set out in Table 4.3.

**Table 4.3 Customer share notional revenue requirement and target revenue ($millions, $2016-17)**

| Building Blocks | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Total |
|---|---|---|---|---|---|
| Operating expenditure | 33.2 | 31.6 | 31.1 | 30.2 | 126.0 |
| ICD Rebates | 1.7 | 1.6 | 1.6 | 1.6 | 6.5 |
| Return of capital | 5.9 | 6.6 | 7.1 | 7.5 | 27.1 |
| Return on capital | 10.7 | 11.6 | 12.4 | 13.0 | 47.7 |
| Tax allowance | 0.4 | 0.4 | 0.4 | 0.4 | 1.6 |
| Volatility allowance | 0.8 | 0.8 | 0.8 | 0.8 | 3.1 |
| UOM payback | 2.8 | 2.9 | 3.0 | 3.1 | 11.8 |
| MDBA and BRC costs | 19.1 | 14.7 | 14.0 | 13.8 | 61.6 |
| Notional revenue requirement (NRR) | **74.5** | **70.2** | **70.4** | **70.4** | **285.4** |
| Target Revenue | **69.9** | **69.9** | **70.0** | **70.1** | **279.9** |
| **Difference NRR and Target Revenue** | **-4.6** | **-0.2** | **-0.4** | **-0.3** | **-5.5** |
| **Difference %** | **-6.2%** | **-0.3%** | **-0.6%** | **-0.4%** | **-1.9%** |

**Note:** This table represents the customer share of costs only. The remaining share of WaterNSW's efficient costs is allocated to the government.

**Source:** IPART analysis.

### Reasons for our draft decision

We apportion costs between customers and the NSW Government (on behalf of the broader community) according to the impactor pays principle. That is, those that create the need to incur the costs, should pay the costs. For the 2017 determination period, we have maintained current customer shares of costs for each cost item or activity (which are based on earlier assessments and applications of the impactor pays principle), but we have flagged a more comprehensive review of cost shares to inform the next price determination. Chapter 9 provides further explanation of our decisions on the customer share of WaterNSW's NRR.

Once we determine the customer share of NRR, we then look to set prices to recover this share. However, for the 2017 determination period, the target revenue to be recovered from water prices is slightly lower than the customer share of the NRR. This is because of our decision to set prices below the full cost recovery level for the North Coast and South Coast valleys. Our decision to set prices below the full cost recovery level for the North Coast and South Coast valleys is discussed in Chapter 12.

We have decided to set target revenue that smooths customers' bills and prices over the 2017 determination period. That is, target revenue is smoothed over the four years of the determination to provide a stable price path. For all services, target revenue is Net Present Value (NPV) neutral. This means that prices are set so that customers are no better or worse off over the whole determination period as a result of this smoothing process (in present value terms).

## Comparison with the 2014 ACCC decision

Our annual average customer share of NRR is $5.1 million, or 6.7%, below that which the ACCC used to set prices for its 2014 Decision. We compare our annual average customer share of NRR for each of the building blocks in our 2017 Determination with the ACCC's 2014 Decision in Table 4.4.

**Table 4.4 Comparison of 2014 ACCC Decision and IPART 2017 Determinations customer share NRR ($millions, $2016-17)**

| Building block | ACCC annual average | IPART annual average | Difference | Difference (%) |
|---|---|---|---|---|
| Operating expenditure | 42.8 | 31.5 | -11.2 | -26.3% |
| ICD Rebates | 2.1 | 1.6 | -0.5 | -22.2% |
| Return of capital | 5.5 | 6.8 | 1.3 | 23.0% |
| Return on capital | 12.0 | 11.9 | -0.1 | -0.5% |
| Tax allowance | 0.0 | 0.4 | 0.4 | |
| Volatility allowance | 0.0 | 0.8 | 0.8 | |
| UOM allowance | 0.5 | 3.0 | 2.4 | 472.5% |
| MDBA and BRC costs | 13.6 | 15.4 | 1.8 | 13.0% |
| Notional revenue requirement | **76.5** | **71.4** | **-5.1** | **-6.7%** |

**Note:** Totals may not add due to rounding. The ACCC decision did not include Coastal valleys. We have included our allowance for Coastal valleys for comparison purposes.

**Source:** ACCC Final Report June 2014; IPART analysis.

The overall reduction in the customer share of NRR (and total NRR) between the 2014 and 2017 regulatory periods is due to decisions relating to:

- lower operating expenditure (**-$11.2 million)** due to:
  - efficiencies WaterNSW achieved over the 2012 determination period and our decision on further ongoing efficiencies over the 2017 determination period
- lower return on capital (**-$0.1 million**) through:
  - a reduction in the WACC
- a higher UOM allowance as a result of our decision to discontinue and 'pay out' the UOM mechanism (**+$2.4 million**), and
- higher MDBA and BRC costs (**+$1.8 million**).

# 5 Operating expenditure allowance

This chapter sets out our assessment of WaterNSW's efficient level of operating expenditure for the 2017 Determination. As Chapter 4 outlined, the allowance for operating expenditure within the notional revenue requirement reflects our view of the efficient level of operating costs WaterNSW will incur in providing its services over the 2017 determination period. These include, amongst others, the costs of labour, service contractors, energy, materials, plant and equipment.

In making our draft decision on the operating expenditure allowance, we engaged Aither (our expenditure consultant) to review the efficiency of WaterNSW's proposed expenditure over the 2017 determination period. We asked Aither to recommend any further efficiency savings that it considered that WaterNSW should be able to achieve.

## 5.1 Summary of operating expenditure

We made a draft decision:

8 To set the efficient level of WaterNSW's operating expenditure as shown in Table 5.1.

**Table 5.1 Draft efficient operating expenditure compared to WaterNSW's proposal ($millions, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Total |
|---|---|---|---|---|---|
| WaterNSW proposal[a] | 37.04 | 35.47 | 34.86 | 33.57 | 140.94 |
| IPART draft decision | 36.68 | 35.05 | 34.48 | 33.24 | 139.45 |
| Difference | -0.36 | -0.42 | -0.37 | -0.33 | -1.48 |
| Difference % | -1.0% | -1.2% | -1.1% | -1.0% | -1.1% |

**b** WaterNSW's proposed operating expenditure from its June 2016 proposal has been modified to exclude the risk transfer product (RTP); and includes additional expenditure on a Prioritised Fish Passage Program proposal that WaterNSW outlined in its October 2016 submission to IPART's Issues Paper.

**Note:** Totals may not add due to rounding.

**Source:** WaterNSW Pricing Proposal to IPART, June 2016 pp 97-98, WaterNSW submission to IPART Issues Paper, October 2016, pp 5-6; IPART analysis.

### 5.1.1 Summary of reasons for our draft decision

Since 2014, WaterNSW has realised efficiency gains. It has reduced its actual operating expenditure below the forecasts of efficient operating expenditure made by the ACCC in its 2014 Decision. This has largely been the result of savings achieved through the merger of the former State Water Corporation and the former Sydney Catchment Authority. WaterNSW has proposed that continuing efficiency gains can be realised in operating expenditure in each year of the 2017 determination period.

WaterNSW has proposed total operating expenditure of around $140.9 million over the four years of the 2017 determination period. This excludes WaterNSW's proposed risk transfer

product (RTP), as our draft decision on this proposed expenditure item is outlined separately in Chapter 8.

Our draft decision sets WaterNSW's total allowance for operating expenditure at $139.5 million over the 2017 determination period. In doing so, we reduced WaterNSW's proposed operating expenditure by $1.5 million (or 1.1%).

Table 5.2 below shows our draft decision on allowed operating expenditure broken down by valley, and compared to WaterNSW's proposal.

**Table 5.2 Draft efficient operating expenditure by valley 2017-18 to 2020-21 ($millions, $2016-17)**

| | Total | Customer share | WNSW Proposed customer share[a] | % reduction in customer share compared to WNSW proposal |
|---|---|---|---|---|
| Border | 4.99 | 4.27 | 4.40 | -2.7% |
| Gwydir | 14.98 | 13.48 | 13.64 | -1.2% |
| Namoi | 14.91 | 13.23 | 13.39 | -1.2% |
| Peel | 3.68 | 2.98 | 3.02 | -1.2% |
| Lachlan | 17.61 | 15.65 | 15.82 | -1.1% |
| Macquarie | 15.72 | 13.70 | 13.85 | -1.1% |
| Murray | 10.59 | 10.09 | 10.23 | -1.4% |
| Murrumbidgee | 25.30 | 23.22 | 23.49 | -1.1% |
| Lowbidgee | 1.45 | 1.45 | 1.45 | -0.2% |
| North Coast | 3.08 | 2.52 | 2.53 | -0.5% |
| Hunter | 12.42 | 10.41 | 10.51 | -1.0% |
| South Coast | 3.14 | 2.57 | 2.58 | -0.5% |
| Fish River | 11.59 | 11.59 | 11.72 | -1.1% |
| Total | 139.45 | 125.16 | 126.64 | -1.2% |

[a] WaterNSW's proposed operating expenditure from its June 2016 proposal has been modified to exclude the risk transfer product (RTP); and includes additional expenditure on a Prioritised Fish Passage Program proposal that WaterNSW outlined in its October 2016 submission to IPART's Issues Paper.

**Note:** Totals may not add due to rounding.

**Source:** IPART analysis; WaterNSW pricing proposal to IPART, June 2016; WaterNSW Information Return, September 2016; WaterNSW submission to IPART Issues Paper, October 2016, pp 5-6.

Our draft decision reflects our assessment of the level of the efficient operating expenditure WaterNSW should be able to achieve, given its operating environment. In making our decision, we considered:

- WaterNSW's actual operating expenditure in recent years compared to expenditure allowed in IPART's 2010 Determination, and the ACCC's 2014 Decision
- the level of operating expenditure WaterNSW forecast over the 2017 determination period
- the steps WaterNSW has taken to continually improve its efficiency and the level of services it delivers, and
- the additional efficiency savings we consider WaterNSW could make.

Aither recommended that WaterNSW's efficient level of operating expenditure should be $1.5 million lower than the amount WaterNSW proposed.[49] This is based on reductions to 20-year asset management strategy costs (of $1.1 million) and SCADA costs (of $0.4 million), as outlined below.[50] We have accepted Aither's recommended reductions. Other than these discrete adjustments, Aither found that WaterNSW's forecast operating expenditure was generally efficient.

WaterNSW's total operating expenditure is expected to decline each year over the next four years. Under our draft decision, by 2020-21, we forecast WaterNSW's total annual efficient operating expenditure would be $33.2 million, compared to its expenditure in 2015-16 of $43.2 million.[51]

Our assessment of WaterNSW's actual operating expenditure over the previous determination period and its forecast operating expenditure over the 2017 determination period are discussed further in the sections below.

## 5.2 WaterNSW proposed lower operating expenditure

WaterNSW has proposed total operating expenditure of around $140.9 million over the four years of the 2017 determination period.[52] This compares to actual operating expenditure of $172 million over the four years from 2013-14 to 2016-17. WaterNSW's proposed total operating expenditure for all valleys is 20 per cent below its current allowance at 30 June 2017.[53] According to WaterNSW, it has realised significant savings from the integration and restructure of the former State Water Corporation and Sydney Catchment Authority.[54]

In its pricing proposal to IPART, WaterNSW attributes its forecast savings to a range of activities, including[55]:

- routine maintenance
- asset management planning
- hydrometric monitoring, and environmental planning and protection.

These savings are partially off-set by higher expenditure on:

- customer support and compliance
- water delivery and other operations, and
- corporate systems.

49 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, p xx.
50 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, p 113.
51 WaterNSW pricing proposal to IPART, June 2016, p 97
52 WaterNSW proposed operating expenditure has been modified to exclude $14.4 million for the risk transfer product (RTP); and include additional expenditure on a Prioritised Fish Passage Program proposal that WaterNSW outlined in its submission to IPART's Issues Paper.
53 WaterNSW pricing proposal to IPART, June 2016, p 95.
54 WaterNSW pricing proposal to IPART, June 2016, p 95.
55 WaterNSW pricing proposal to IPART, June 2016, p 97.

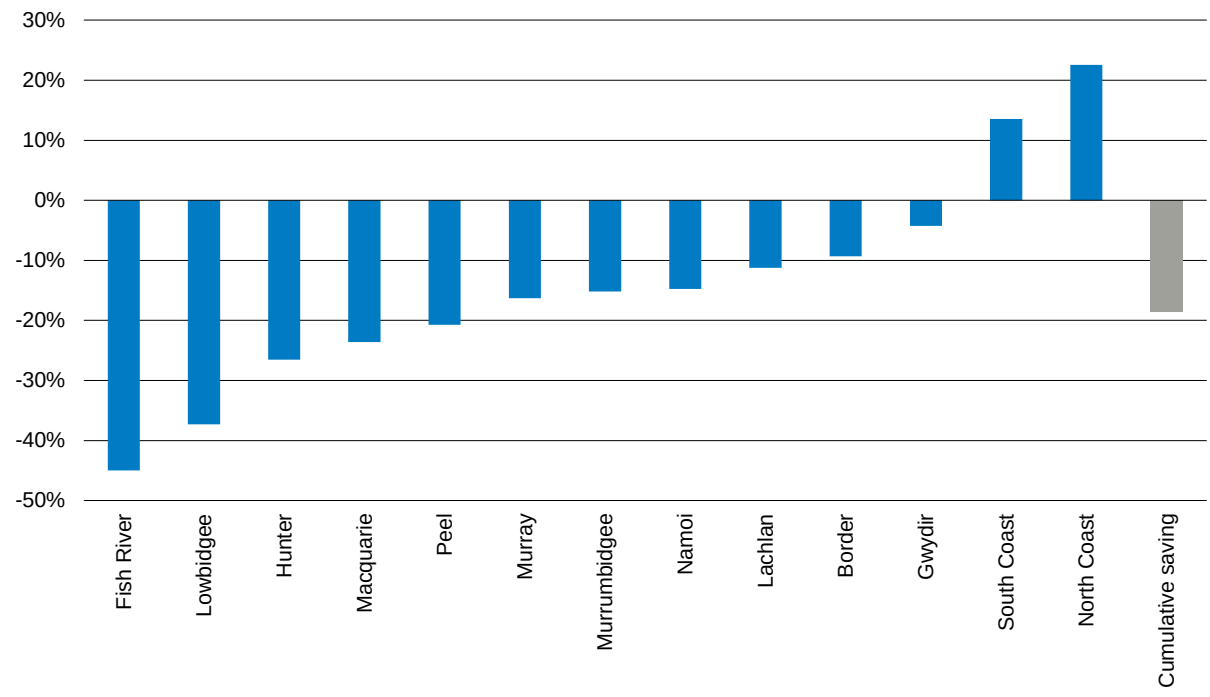
WaterNSW's June 2016 pricing proposal flagged that fishway expenditure may need to be updated when WaterNSW completed discussions with DPI Fisheries about how to meet its regulatory obligations under the *Fisheries Management Act 1994* (NSW) (FMA).[56]

In its October 2016 submission to IPART's Issues Paper, WaterNSW proposed an additional $1.58 million of operating expenditure (across the Gwydir, Lachlan and Macquarie valleys), to fund the planning, design, optimised costing and business case activities needed to finalise its Long-term Prioritised Fish Passage Program proposal. WaterNSW noted this expenditure would lead to a small increase in bills in each of these three valleys (around 1% on average) compared to WaterNSW's initial proposal.[57]

WaterNSW's proposed total operating expenditure is lower than the regulatory allowance for 2016-17 in most valleys.

The exceptions are the North Coast and South Coast valleys, where WaterNSW proposed increases of around $136,000 and $91,000, respectively, between 2016-17 and 2020-21. Figure 5.1 shows WaterNSW's proposed distribution of total operating expenditure reductions between valleys. A similar pattern occurs for the customer share of operating expenditure, with decreases for all valleys over the same period with the exception of the North and South Coast.

**Figure 5.1 WaterNSW's proposed change in operating expenditure by valley from regulatory allowance for 2016-17 and proposed 2020-21 (%)**




**Data source:** WaterNSW pricing proposal to IPART, June 2016, p 96.

Operating expenditure is forecast to decrease most significantly for the Fish River Water Supply Scheme, by around $2.3 million between 2016-17 and 2020-21. This is due to a

56 WaterNSW pricing proposal to IPART, June 2016, p 87.

57 WaterNSW submission to IPART Issues Paper, October 2016, p 6; Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, p 111.

significant reduction in forecast demand because of the closure of Wallerawang power station.[58]

### 5.2.1 Operating costs have been lower than forecast over recent years

Table 5.3 sets out WaterNSW's operating expenditure over the 2014 determination period. WaterNSW expects its actual operating expenditure to be 15.5 per cent below its regulatory (or determination) allowance over the 2014-15 to 2016-17 period. It attributes the reduced expenditure to a combination of:

- restructuring within the organisation, resulting in lower expenditure on salaries and wages and employee related costs
- reductions in the use of contractors and consultancies, and
- reductions in the cost of materials, plant and equipment.[59]

**Table 5.3 Actual operating expenditure compared with determined over 2014-15 to 2016-17 ($millions, $2016-17)[a]**

| | 2014-15 | 2015-16 | 2016-17[b] | Total |
|---|---|---|---|---|
| Determination[a] | 47.0 | 46.7 | 46.1 | 139.8 |
| Actual | 41.8 | 36.2 | 40.0 | 118.0 |
| Difference | -5.2 | -10.5 | -6.0 | -21.7 |
| Difference % | -11.0% | -22.6% | -13.1% | -15.5% |

**a** Prices in Coastal valleys have remained constant in nominal terms since 2013-14. For comparison, we have also held the allowance for operating expenditure for these valleys constant in nominal terms.

**b** 2016-17 figures are forecasts.

**Note:** Totals may not add due to rounding.

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 136; IPART analysis.

Table 5.4 below shows WaterNSW's customer share of operating expenditure relative to the allowances included in IPART's 2010 Determination and the ACCC's 2014 Decision. The operating costs for 2016-17 are forecast to be $5.8 million or 13.8% less than the allowed operating expenditure.

The cumulative customer share of WaterNSW's actual operating expenditure over the 2014 determination period will be $107.7 million, which is around $20.5 million (16%) less than the operating expenditure allowed for in IPART's 2010 Determination and the ACCC's 2014 Decision.

58 WaterNSW pricing proposal to IPART, June 2016, p 41.
59 WaterNSW pricing proposal to IPART, June 2016, p 136.

**Table 5.4 WaterNSW customer share of operating expenditure compared with IPART Determination and ACCC Decision ($millions, $2016-17)**

| | 2014-15 | 2015-16 | 2016-17 | Total |
|---|---|---|---|---|
| Allowed[a] | 43.2 | 42.8 | 42.2 | 128.3 |
| Actual | 38.3 | 33.0 | 36.4 | 107.7 |
| Difference | -4.9 | -9.8 | -5.8 | -20.5 |
| Difference % | -11.3% | -23.0% | -13.8% | -16.0% |

**a** Prices in Coastal valleys have remained constant in nominal terms since 2013-14. For comparison, we have also held the allowance for operating expenditure for these valleys constant in nominal terms.

**Note:** Allowed expenditure in 2013-14 is from IPART's 2010 Determination; Allowed expenditure from 2014-15 for Murray-Darling Basin valleys is from the ACCC's 2014 Decision.

**Source:** WaterNSW Information Return, June 2016; IPART, *Review of bulk water charges for State Water Corporation – From 1 July 2010 to 30 June 2014,* June 2010, pp 78-79.

## 5.3 Our analysis generally supports WaterNSW's proposal

Aither, our expenditure review consultant, found that WaterNSW's proposed operating expenditure for the 2017 determination period was generally prudent and efficient, and only recommended two downward adjustments outlined in the sections below. Both of these reductions relate to 100% customer share activities.

Other than these discrete reductions, Aither found that generally, WaterNSW's overall proposed operating expenditure is likely to represent a reasonable forecast of what an efficient service operator would need to incur in order to operate a similar business. Aither also considered WaterNSW's lower operating expenditure compared to the previous regulatory period would not compromise service delivery:

> …if anything, WaterNSW's forecasts could represent a challenging and ambitious agenda to achieve. We do however acknowledge WaterNSW's efforts to tighten expenditure and reduce costs to customers, and WaterNSW did not suggest during the review that the proposed opex levels were not realistic, including having stated that it will be able to continue to deliver the levels of service its customers have been accustomed to.[60]

As part of its October 2016 submission to IPART's Issues Paper, WaterNSW added additional operating expenditure of $1.58 million on a Prioritised Fish Passage Program proposal.[61] Aither concluded a prudent service operator would undertake appropriate planning and design in support of any such a strategy, as well as monitoring the program, and that the overall magnitude of the proposed additional expenditure is reasonable.[62]

Submissions to our Issues Paper generally welcomed the forecast reduction in operating expenditure, with some recommending it be subject to an independent expenditure review.[63] Macquarie River Food and Fibre stated that it:

> ….welcomes the efficiency gains in OPEX costs being realised by WaterNSW, primarily as a result of the integration and restructuring of the former State Water Corporation and Sydney Catchment

60 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, p xx.
61 WaterNSW pricing proposal to IPART, June 2016, p 6.
62 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, p 112.
63 For example, Macquarie River Food and Fibre submission to IPART Issues Paper, October 2016 p 8, Lachlan Valley Water submission to IPART Issues Paper October 2016, p 6, Gwyidr Valley Irrigators Association submission to IPART Issues Paper, October 2016, p 13 and NSW Irrigators Council submission to IPART Issues Paper, October 2016 p 18.

> Authority. We would expect that as the new business structure is bedded down that there would be room for further efficiency gains within WaterNSW's operations. MRFF also acknowledges and welcomes IPART's decision to engage a consultant to review the efficiency of the proposed level of OPEX for the current pricing review.[64]

Similarly, Gwydir Valley Irrigators Association (GVIA) argued:

> …the GVIA has welcomed the 3.6% decrease in operating expenditure required in our valley from 2016-17 through to 2020-21. … The GVIA believes that larger efficiencies than the stated 3.6% should be realised by WaterNSW over the next determination period, for the following reasons:
>
> - Realisation of efficiencies from the organisation restructure.
> - Strategic priority to be "more modern and efficient organisation".
> - Underspend on previous allowable revenue (or overstatement of requirement).
> - Opportunity to drive further efficiencies.
>
> We request that IPART review the operational expenditure with the above considerations and revise the requirement as part of their determination advice.[65]

A number of stakeholders requested clarity on why certain categories of operating expenditure were increasing, in particular 'water delivery and other operations', 'dam safety compliance' and 'customer support, compliance and other'.[66]

Aither examined the changes in expenditure by category, particularly where forecast expenditure for specific items increased by over 3.5 per cent, and acknowledged WaterNSW's comment that it is difficult to draw definitive conclusions regarding trends for individual categories, as some costs can shift between categories over time. For example, maintenance and IT costs have shifted into the water delivery category due to changes in service unit functions and the revised organisation structure.[67] WaterNSW had also included the proposed costs of its risk transfer product (RTP) in the 'customer support, compliance and other' category.[68] Our response to WaterNSW's proposed expenditure on the RTP is considered separately in Chapter 8. Removing the allowance for the RTP lowers the forecast expenditure in this category by 53 per cent.

Overall, with the exception of the SCADA costs in the 'Water Delivery and Other Operations' category discussed below, Aither found that proposed operating expenditure (in categories where expenditure was increasing) was efficient.[69]

### 5.3.1 We have allowed lower expenditure for two items

Based on advice from Aither, we have made two downward adjustments to WaterNSW's operating expenditure allowance for the 2017 Determination. Both of these adjustments relate to 100% customer share activities.

64 MRFF submission to IPART Issues Paper, October 2016, p 8.
65 GVIA submission to IPART Issues Paper, October 2016, p 13.
66 Namoi Water submission to IPART Issues Paper, October 2016, p 3; NSWIC submission to IPART Issues Paper, October 2016, p 6; Lachlan Valley Water submission to IPART Issues Paper, October 2016, p 6.
67 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, p 84.
68 WaterNSW pricing proposal to IPART, June 2016, p 97.
69 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, p 113.

### 20-year asset management strategy

WaterNSW proposed increasing its operating expenditure to develop a 20-year asset management strategy that covers all of its assets.[70] This involves developing a long-term strategy for each valley.[71] This is the only key material operating expenditure activity where WaterNSW forecast a significant increase in proposed expenditure over the regulatory period.

Aither recommended a reduction in 20-year asset management strategy costs of $1.1 million (30 per cent of the total proposed expenditure on this item).[72] It acknowledged that a long term approach to asset management is consistent with a prudent service provider. This is because such an approach leads to more efficient outcomes in the long-term, which is to the benefit of customers in terms of lower cost and higher levels of service. However, Aither found the proposed costs were not efficient as they were based on preliminary estimates and did not incorporate any potential synergies of undertaking similar tasks across multiple valleys.[73]

### Supervisory control and data acquisition (SCADA)

Supervisory control and data acquisition (SCADA) is a networked data collection, collation and interface system. WaterNSW's proposal included increased capital expenditure related to SCADA systems improvements (instrumentation and automation).[74]

As part of its review of WaterNSW's proposed capital expenditure (discussed in Chapter 6), Aither found the expenditure was poorly justified and recommended reducing allowed capital expenditure by 25 per cent for this activity. Given operating expenditure levels on this activity are linked to the rollout of the capital infrastructure, Aither consider it reasonable that WaterNSW's operating expenditure forecast should reflect any efficiency adjustment to the capital expenditure allowance. Therefore, for consistency, Aither recommended a reduction in the operating expenditure allowance for SCADA of $0.4 million (or 25 per cent).[75]

70 This expenditure was proposed within the 'Asset Management and Planning' category.
71 WaterNSW pricing proposal to IPART, June 2016, p 102.
72 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, pp 106-110.
73 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, p 110.
74 This expenditure was proposed within the 'Water Delivery and Other Operations' category.
75 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, February 2017, pp 110-111.

# 6 Capital expenditure

This chapter sets out our draft decisions on WaterNSW's prudent and efficient capital expenditure. As with operating expenditure, we engaged Aither to review WaterNSW's historical and forecast capital expenditure[76] and make recommendations on the amount of capital expenditure that should be added to the regulatory asset base (RAB).

Under the building block method, there is no explicit allowance for capital expenditure in the notional revenue requirement. Instead, the prudent and efficient capital expenditure is added to the RAB for each valley and recovered through allowances for a return on assets and regulatory depreciation (discussed in Chapter 4).

To decide how much capital expenditure is added to the RAB, we asked Aither to review WaterNSW's proposed expenditure and apply prudence and efficiency tests:

- The prudence test assesses whether any decision to invest in an asset is one that WaterNSW, acting prudently, would be expected to make. The test assesses both how the decision was made, and how the investment was executed (ie, the construction or delivery of the asset), having regard to information available at the time.
- The efficiency test assesses whether the proposed expenditure represents (over the life of the asset) the best way of meeting customer needs, subject to any regulatory requirements on WaterNSW.

As part of its review, Aither also reported on WaterNSW's performance against past output measures, and recommended new output measures for the 2017 determination period. The new output measures for the 2017 Determination and associated reporting timeframes are outlined in Appendix B.

76 In this Chapter, any reference to WaterNSW's actual, forecast or proposed capital expenditure refers to an information return that WaterNSW provided to IPART in September 2016. WaterNSW's actual and forecast expenditure in Aither's expenditure review is based on updated expenditure forecasts provided by WaterNSW to Aither in October 2016. While we have not presented these updates as part of WaterNSW's actual and proposed expenditure, we have factored them into our expenditure allowances.

## 6.1 Our draft decisions on capital expenditure

We made draft decisions:

9 To set the level of WaterNSW's capital expenditure to be included in the RAB as:

- actual capital expenditure for Murray-Darling Basin valleys over the 2014-15 to 2016-17 period, excluding $1.62 million on fishway offset expenditure in 2016-17, as set out in Table 6.1.
- actual capital expenditure for Coastal valleys over the 2010-11 to 2016-17 period, as set out in Table 6.2, and
- IPART's draft finding on forecast prudent and efficient capital expenditure for all valleys over the 2017 determination period, as set out in Table 6.3.

10 To require WaterNSW to report on the output measures outlined in Appendix B.

**Table 6.1 Draft prudent and efficient capital expenditure in MDB valleys compared with 2014 Decision over 2014-15 to 2016-17 ($millions, $2016-17)**

| | 2014-15 | 2015-16 | 2016-17[a] | Total |
|---|---|---|---|---|
| ACCC 2014 Decision | 41.98 | 31.38 | 46.69 | 120.05 |
| Total actual expenditure | 19.71 | 21.12 | 49.44 | 90.27 |
| Customer share | 5.96 | 5.48 | 29.77 | 41.21 |
| Government share | 13.75 | 15.64 | 19.66 | 49.06 |
| Difference | -22.27 | -10.26 | 2.74 | -29.79 |
| Difference % | -53.1% | -32.7% | 5.9% | -24.8% |

**a** 2016-17 figures are forecasts; and $1.62 million has been removed from the forecast for fishway offset expenditure.

**Note:** These figures are net of externally funded contributions. Totals may not add due to rounding.

**Source:** WaterNSW Information Return, September 2016; IPART analysis.

**Table 6.2 Draft prudent and efficient capital expenditure in Coastal valleys compared with 2010 Determination ($millions, $2016-17)**

| | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17[a] | Total |
|---|---|---|---|---|---|---|---|---|
| IPART 2010 Determination | 0.79 | 0.49 | 0.39 | 0.23 | - | - | - | |
| Total actual expenditure | 1.01 | 0.87 | 1.31 | 0.87 | 0.26 | 0.55 | 1.98 | 6.85 |
| Customer Share | 0.97 | 0.87 | 1.24 | 0.79 | 0.26 | 0.51 | 1.15 | 5.79 |
| Government Share | 0.04 | 0.00 | 0.07 | 0.08 | 0.00 | 0.04 | 0.83 | 1.06 |
| Difference | 0.22 | 0.39 | 0.92 | 0.64 | | | | |
| Difference % | 28.2% | 79.6% | 235.3% | 277.2% | | | | |

**a** 2016-17 figures are forecasts.

**Note:** These figures are net of externally funded contributions. Totals may not add due to rounding.

**Source:** WaterNSW Information Return, September 2016; IPART analysis.

**Table 6.3 Draft prudent and efficient forecast capital expenditure compared to WaterNSW's proposal ($millions, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Total |
|---|---|---|---|---|---|
| WaterNSW's Proposal | 65.58 | 49.91 | 47.64 | 32.63 | 195.77 |
| IPART's draft decision[a] | 50.49 | 50.13 | 26.52 | 24.40 | 151.55 |
| Customer share | 35.14 | 35.40 | 24.88 | 22.94 | 118.36 |
| Government share | 15.36 | 14.73 | 1.64 | 1.46 | 33.19 |
| Difference | -15.09 | 0.22 | -21.12 | -8.23 | -44.22 |
| Difference % | -23.0% | 0.4% | -44.3% | -25.2% | -22.6% |

[a] IPART's draft decision incorporates updated information from WaterNSW based on a reforecast for works at Keepit Dam.

**Note:** These figures are net of externally funded contributions. Totals may not add due to rounding.

**Source:** WaterNSW Information Return, September 2016; IPART analysis.

### 6.1.1 Summary of reasons for our draft decisions

WaterNSW's past capital expenditure outcomes were mixed. For MDB valleys, WaterNSW spent less than the expenditure allowance in the ACCC's 2014 Decision; and for Coastal valleys, WaterNSW spent more than IPART's allowance in the 2010 Determination. Following a review by Aither, we have accepted WaterNSW's actual past capital expenditure as prudent and efficient. However, we have removed $1.62 million in 2016-17 for a fishway project (discussed further below).

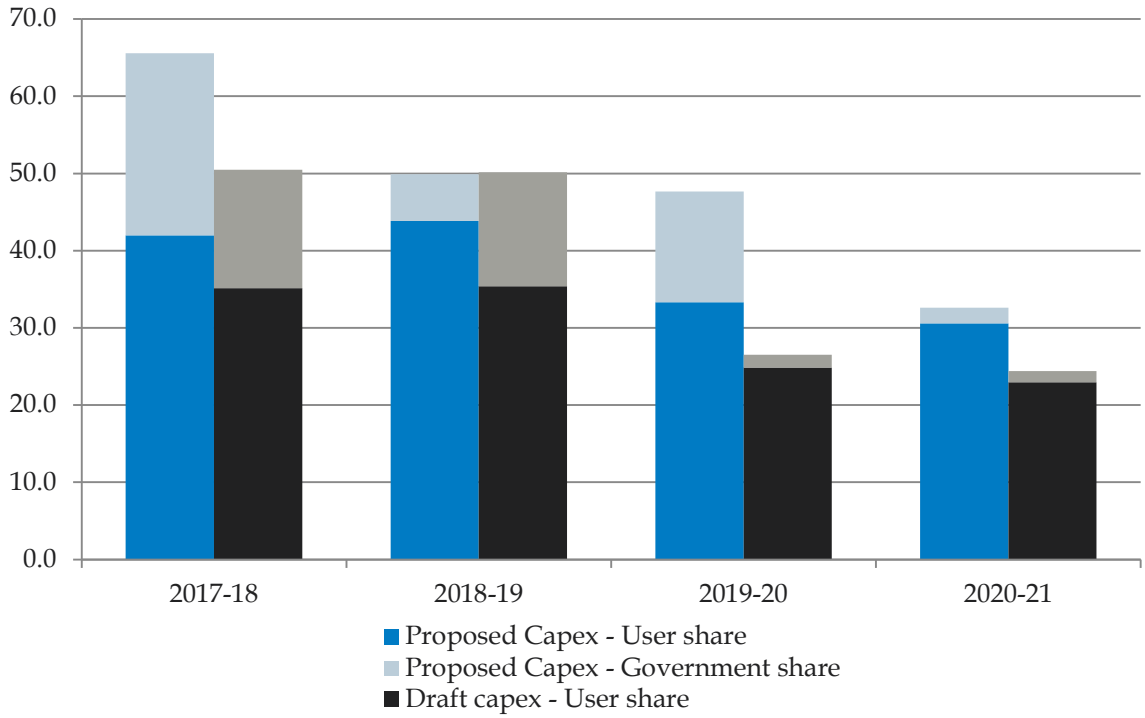
Our draft decision sets WaterNSW's allowance for capital expenditure at $151.6 million over the 2017 determination period. In doing so, we have reduced WaterNSW's proposed capital expenditure by $44.2 million (22.6%). In part, this reflects updated information provided by WaterNSW relating to reforecasting expenditure for works on Keepit Dam. We have also made the following reductions:

- $21.0 million in WaterNSW's proposed general 'per valley' renewals expenditure (25% of WaterNSW's proposed expenditure on renewals)
- $12.4 million relating to sampled projects that did not fully satisfy prudence and efficiency tests (45% of proposed expenditure on these projects), and
- $1.62 million for a fishway project in the Namoi RAB (all future expenditure proposed for this item).

These reductions are discussed in further detail below.

Figure 6.1 compares WaterNSW's proposed future capital expenditure with IPART's draft decision, on a government and customer share basis.

**Figure 6.1 Draft prudent and efficient forecast capital expenditure compared to WaterNSW's proposal ($millions, $2016-17)**




**Data source:** IPART analysis.

Table 6.4 below shows our draft decision on total and customer share capital expenditure compared with WaterNSW's proposal, by valley.

**Table 6.4 Draft capital expenditure by valley 2017-18 to 2020-21 ($millions, $2016-17)**

| | Total | Customer share | WaterNSW Proposed customer share | % reduction in customer share compared to proposal |
|---|---|---|---|---|
| Border | 0.78 | 0.72 | 1.07 | -32.1% |
| Gwydir | 10.13 | 9.68 | 11.56 | -16.3% |
| Namoi | 37.36 | 10.89 | 14.62 | -25.5% |
| Peel | 2.74 | 2.45 | 2.87 | -14.6% |
| Lachlan | 17.37 | 15.94 | 19.83 | -19.6% |
| Macquarie | 12.11 | 11.30 | 14.61 | -22.6% |
| Murray | 6.11 | 5.68 | 6.40 | -11.3% |
| Murrumbidgee | 32.82 | 30.30 | 39.28 | -22.9% |
| Lowbidgee | 8.44 | 8.44 | 10.02 | -15.8% |
| North Coast | 1.50 | 1.38 | 1.64 | -15.7% |
| Hunter | 6.52 | 6.01 | 8.18 | -26.5% |
| South Coast | 1.37 | 1.25 | 1.46 | -14.5% |
| Fish River | 14.31 | 14.31 | 18.15 | -21.2% |
| Total | 151.55 | 118.36 | 149.71 | -20.9% |

**Note:** Totals may not add due to rounding.
**Source:** IPART analysis.

## 6.2 We have accepted past capital expenditure as prudent and efficient

Overall, WaterNSW's actual past capital expenditure compared to that allowed has varied between MDB and Coastal valleys.

In MDB valleys, WaterNSW forecast capital expenditure was approximately $29.8 million (or 25%) less than the allowance in the ACCC's 2014 Decision. The majority of the underspend is on the government share ($25.7 million, or 86%), with the customer share underspend at $4.2 million (or 14%).[77]

In Coastal valleys, during IPART's 2010-11 to 2013-14 determination period WaterNSW overspent by approximately $1.7 million.[78] Total capital expenditure in Coastal valleys between 2010-11 and 2016-17 is forecast to be $6.9 million, of which $5.8 million (85%) is allocated to the customer share RAB.

Aither found that past capital expenditure was prudent and efficient and did not recommend any adjustments. Aither noted WaterNSW's comments that the merger of State Water and the Sydney Catchment Authority contributed to lower than forecast expenditure, and Aither also found evidence of good decisions to defer expenditure (such as on business information systems) that otherwise may have been imprudent or inefficient.[79]

77 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p 59.
78 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p xv.
79 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p xv.

Our draft decision is therefore to accept WaterNSW's actual past capital expenditure as prudent and efficient. However, we have removed $1.62 million in 2016-17 for fishway offset expenditure, as outlined further below.

## 6.3 WaterNSW is forecasting an increase in capital expenditure

WaterNSW is proposing approximately $195.8 million in capital expenditure for the 2017 determination period.[80] On a total and customer share basis, WaterNSW's forecast represents a significant increase in expenditure from the current determination period; the average annual customer share for the next determination period is more than twice the current period.

WaterNSW's proposed total capital expenditure for the 2017 determination period is higher than the regulatory allowance in IPART's 2010 Determination (Coastal valleys) and the ACCC's 2014 Decision (MDB valleys) over the four years to 2016-17 in most valleys.

The exceptions are the Peel and Lachlan valleys, where WaterNSW proposed a lower annual average capital expenditure of around $9.2 million (a reduction of 92%) and $4.9 million (a reduction of 47%), respectively, over the 2017 determination period as compared to the allowed annual average capital expenditure for the four years to 2016-17.[81]

On a customer share basis, WaterNSW's proposed capital expenditure is higher in all valleys when compared with annual average allowed capital expenditure over the four years to 2016-17. This reflects that expenditure is forecast to increase for activities with a higher customer share.

In terms of the mix of WaterNSW's forecast capital expenditure, the majority is allocated to the 'Maintaining capability' category (62%), which includes asset renewals or replacement. The next largest category is 'augmenting' (14.8%), followed by 'regulatory dam safety' (14.5%). WaterNSW's forecasts reflect a significant change in the mix of capital expenditure, with only $17.6 million (average $5.9 million per annum) allocated to the equivalent 'Maintaining capability' category in the current determination period versus a proposed $115.6 million ($28.9 million per annum) for the upcoming 2017 determination period.[82]

WaterNSW identified the primary drivers of its capital program as:

- reducing risk of asset related failure to the organisation, customers, and the community
- maintaining the required levels of service to customers
- reducing health and safety related risks to staff, customers and the community, and
- reducing risks associated with non-compliance with regulatory requirements.[83]

80 This figure accounts for WaterNSW's adjustments to its June pricing proposal provided in its September update, the adjustments relate to Fishway expenditure and expenditure on Keepit Dam.

81 The large relative reductions in the Peel and Lachlan valleys are a result of significant capital expenditure over the 2014 determination period. The expenditure in both valleys over the 2014 determination period were largely government share, and as such had little impact on customer bills.

82 This breakdown is based on additional information provided by WaterNSW on 11 October 2016. Source: Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p xvi.

83 WaterNSW pricing proposal to IPART, June 2016, p 84.

WaterNSW noted that its capital expenditure program is primarily aimed at the renewal and replacement of assets that are used to collect, store and deliver raw water to customers. This is to ensure asset reliability and capability is properly maintained.[84] As such, users bear a high proportion (50 per cent) of WaterNSW's proposed capital expenditure, based on the impactor pays principle.

Stakeholders were concerned about the proposed increase in capital expenditure, and the transparency of WaterNSW's approach to capital expenditure.[85] For example, Gwydir Valley Irrigators (GVIA) submitted:

> The GVIA does not support the high level approach by WaterNSW to budget and prepare for capital expenditure in the forthcoming determination. We were vocal throughout the consultation period that water users, who are paying the majority share of capital expenditure are entitled to have greater transparency and therefore, hold WaterNSW more accountable for the implementation of the program. The current proposal leaves water users, with less information and therefore, less confidence in WaterNSW's ability to implement the program than what we previously had.[86]

GVIA were particularly concerned about the increase in the capital expenditure, the lack of information on individual projects, or consultation on projects, and past underspending by WaterNSW.[87]

Similarly, Murrumbidgee Irrigation commented:

> WaterNSW has been operating this infrastructure for many decades - it is not reasonable to take a blank page approach to managing its capital assets using only theoretical upper limit benchmarks. Customers expect at least clear business cases for major capital works as we have seen in the past. We note that WaterNSW has partially justified the increase in proposed CAPEX by referencing past determinations. It is our understanding that the approved CAPEX in these determinations was significantly underspent. Actual expenditure would be a more appropriate reference point.[88]

And, Lachlan Valley Water argued:

> The new approach to capital expenditure and WaterNSW's proposal to use a capital maintenance allowance as the basis for calculating the return on capital will result in a significant increase in the user share of the notional revenue requirement which will continue to rise even further over time. We are also concerned that it is not clear from the information provided that this approach will result in efficient capital expenditure and will deliver value for users.[89]

### 6.3.1 We have allowed less expenditure than WaterNSW proposed

We have made a number of reductions to WaterNSW's forecast capital expenditure, mainly relating to expenditure on asset renewals. In total, we have reduced WaterNSW's proposed capital expenditure by $44.2 million (22.6%). This reflects:

84 WaterNSW pricing proposal to IPART, June 2016, p 7.
85 Stakeholders that commented on this issue included Bega Valley Water Users Association, Coleambally Irrigation, Gwydir Valley Irrigators Association, Lachlan Valley Water, Murrumbidgee Irrigation and NSW Irrigators Council.
86 GVIA submission to IPART Issues Paper, October 2016, p 14.
87 GVIA submission to IPART Issues Paper, October 2016, p 14.
88 Murrumbidgee Irrigation submission to IPART Issues Paper, October 2016, p 2.
89 LVW submission to IPART Issues Paper, October 2016, p 5.

- updated information from WaterNSW on forecast expenditure for works on Keepit Dam[90]
- the adjustments recommended by Aither (outlined below), which we have accepted in full, and
- a $1.62 million reduction in fishway offset expenditure outlined below.

### Expenditure review recommendations

Aither concluded that WaterNSW's proposed significant increase in capital expenditure was not prudent and efficient. The majority of proposed expenditure was for asset renewals determined largely by a modelling process that Aither found overestimated the expenditure required.[91] While Aither noted that within each valley there were a handful of identified projects that had undergone some level of investigation and design, most had not undergone sufficient work to validate the need, identify and assess options or undertake cost benefit analysis.[92]

Aither also identified other significant items of proposed expenditure that were immature in their development with little certainty over the need for the expenditure, or that the proposed amount of expenditure was efficient.[93]

Aither recommended a reduction in WaterNSW's proposed capital expenditure on renewals of $21 million, or 25 per cent. Table 6.5 outlines how Aither came to this reduction in more detail.

Aither also recommended reducing WaterNSW's proposed capital expenditure by $12.4 million based on its review of a sample of projects, as Aither considered these projects did not fully satisfy prudence and efficiency tests. Depending on the reason for each adjustment, Aither either applied a reduction to the sampled project (in total, a 45 per cent reduction to all sampled projects) or across all items in the expenditure category.[94] Some examples of these reductions include:

- $2.0 million (25 per cent of proposed expenditure) for corporate expenditure on 'supervisory control and data acquisition' and the Operational Systems Programme, as these were at a preliminary stage of budgeting.
- $1.8 million (all of the proposed expenditure) for Renewal and Replacement Asset Engineering due to double counting with the proposed general valley based asset renewals allowance.
- $2.8 million (45 per cent of proposed expenditure) for ICT renewals as the need for WaterNSW's proposed significant increase in ICT renewals was not supported by evidence. Aither therefore recommended an amount be included in line with forecast annual expenditure for 2016-17.

90 On 11 October 2016, as part of the expenditure review, WaterNSW provided Aither with new forecasts for expenditure on Keepit dam. Aither based its recommended adjustments on WaterNSW's proposal including these reforecasts. Source: Aither, *WaterNSW Expenditure Review Final Report*, February 2017, pp 52, 188.
91 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p xvii.
92 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p 65.
93 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p xvii.
94 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, pp 67-68.

**Table 6.5 Aither's recommended reductions to general renewals expenditure**

| | Amount ($million) |
|---|---|
| **WaterNSW's proposed renewals expenditure** | **82.2** |
| *Adjustment for risk averse nature of the risk assessment process*<br>Aither found that the process of accelerating criticality of projects was too risk averse and adjusted for projects where it considered the risk score was advanced prematurely. | *-2.7* |
| *Adjustment for change in scope and inaccuracy in estimating*<br>Aither examined previous period expenditure at the budgeting stage compared to actual expenditure, and found that actual expenditure was achieved at 10% below the budgeted expenditure. | *-7.9* |
| *Adjustment for deferrals from one determination period to the next*<br>In the 2014 Determination, WaterNSW deferred 13.7% of its planned (or forecast) renewals expenditure due to its gateway approval to proceed process. Aither considered that some deferral was likely to occur to its proposed program for the 2017 determination period, but with a lower level of 5%, based on WaterNSW's planning process improvements. | *-3.6* |
| *Adjustment for carry over at the end of the regulatory period*<br>Delays due to either capacity to construct or funding can push expenditure into the following regulatory period, in the current 2014 period, this carry-over was 18% of proposed renewals. Aither considers that carry-over into the 2021 determination period will still occur, but at a lower rate (10% rather than 18%), based on WaterNSW's deliverability process improvements. | *-6.8* |
| *Total reduction* | -21.0 |
| **Aither's recommended renewals expenditure** | **61.1** |

**Source:** Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p 150.

At the next determination of rural bulk water prices scheduled to commence in 2020, we will review WaterNSW's actual historical expenditure. If WaterNSW's capital expenditure exceeds the amount allowed in our current determination, and this expenditure is found to be prudent and efficient, it will be rolled into the RAB at that time.[95]

To this end, we note Aither's comments

> … we were not asked by IPART to approve individual projects but rather recommend a prudent and efficient overall level of expenditure. To do this, the review team needs to be satisfied that the evidence provided supports the level of expenditure proposed as being prudent and efficient. A consequence of the revised approach being taken by WaterNSW is that the justification and documentation for proposed future capital expenditure is limited in some areas (mainly renewals), partly because more robust assessment of the need for expenditure (and exploration of alternatives) is planned to occur post the determination.[96]

In light of this, and the comments from other stakeholders outlined above, WaterNSW should ensure at the next determination that any past or proposed expenditure is clearly

95 This assumes the next review of WaterNSW's prices is conducted under the IPART Act, in line with the ACCC's recommendations in its final advice to the Minister on amendments to the WCIR. Currently, under Schedule 2 of the WCIR all actual historical expenditure is rolled into the RAB, although we note that this provision may also be subject to change under future WCIR amendments. In its final advice, the ACCC recommended incorporating a prudence and efficiency test for historical capital expenditure in the WCIR. Source: ACCC, *Review of the Water Charge Rules Final Advice*, September 2016, pp 146-147, 165.

96 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p xiii.

justified, including by providing evidence that the need for the expenditure and options for meeting that need have been adequately considered.

### We have not allowed all of WaterNSW's proposed fishway expenditure

In its October 2016 submission to IPART's Issues Paper, WaterNSW proposed additional capital expenditure relating to fishways[97], including:

- $3.24 million ($1.62 million each in 2016-17 and 2017-18) on a fishway offset arising from dam safety works in the Namoi valley (with a 50% customer share), and
- $0.44 million across the Gwydir, Lachlan and Macquarie valleys, to fund the planning, design, optimised costing and business case activities needed to finalise its Long-term Prioritised Fish Passage Program proposal.

Aither found that historical capital expenditure was prudent and efficient, including in relation to the additional fishway expenditure outlined above. However, our draft decision excludes the fishway offset expenditure of $3.2 million.

The proposed fishway offset expenditure is driven by dam safety works that were completed in the Namoi valley (relating to Keepit and Split Rock Dam). These works triggered a requirement under section 218 of the *Fisheries Management Act 1994* (NSW) (FMA Act) to undertake works to enable fish pass through. This requirement was originally to be met through offset works on Mollee weir and Gunidgera weir, both within the Namoi valley. The works on Mollee weir have been completed, while the works on Gunidgera weir are outstanding.

The ACCC's 2014 Decision and IPART's 2010 Determination both included approvals for proposed expenditure on Gunidgera Weir fishway (around $4 million in 2014, and $5.2 million in 2010[98]), however the expenditure was deferred.

The current estimated cost of a fishway on Gunidgera weir is around $9 million. WaterNSW has proposed to replace this fishway offset with an offset on Walgett weir in the Barwon valley at a lower cost of $3.2 million. WaterNSW argues this is the most efficient outcome for satisfying its regulatory requirements.[99] Aither supported this view in finding the expenditure to be prudent and efficient.[100]

Namoi-Peel Customer Service Committee (NPCSC) questioned whether the offset is appropriate given work would be undertaken in the Barwon rather than the Namoi.[101] The offset would result in a situation where the value of an asset that is outside the Namoi valley would be included in the Namoi RAB.

97 WaterNSW's pricing proposal flagged that fishway expenditure may need to be updated when WaterNSW completed discussions with DPI Fisheries about how to meet its regulatory obligations under the *Fisheries Management Act 1994* (NSW) (FMA).

98 Atkins Cardno, *Strategic Management Overview and Review of Operating and Capital Expenditure of State Water Corporation 2009*, Final, November 2009, p 60; and Deloitte, *Expenditure forecast review State Water Corporation*, Final Report, 20 December 2013, p 85.

99 WaterNSW submission to IPART Issues Paper, October 2016, p 5.

100 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p 112.

101 IPART Public Hearing, 31 October 2016, Moree, *Transcript*, p 20.

In principle, we support this offset approach as WaterNSW is seeking to discharge its regulatory duties at least cost. While the fishway work is being undertaken in the Barwon, the approach satisfies the 'impactor pays' principle as the regulatory requirement was triggered by work on assets that benefit customers in the Namoi.[102]

However, the NPCSC and Namoi Valley Irrigators Association both stated they had not been consulted prior to learning of the expenditure in WaterNSW's submission to IPART's Issues Paper.[103] This raises uncertainty about the timing of the expenditure decision, given half of the expenditure is planned for the current financial year. Given the history of fishway offset expenditure being allowed and not spent, our draft decision is to exclude the proposed additional fishway offset expenditure of $3.2 million from the Namoi RAB.

We will consider allowing this expenditure as part of our Final Report if WaterNSW is able to provide evidence that the project has progressed. This could include that WaterNSW has articulated its approach to the NPCSC and provided an opportunity for them to respond; and that, at the very least, planning for this capital project has commenced.

102 In August 2016, DPI Fisheries confirmed the offset expenditure would discharge WaterNSW's section 218 obligation to construct a fishway on Gunidgera weir.

103 IPART Public Hearing, 31 October 2016, Moree, *Transcript*, pp 19-21.

# 7 Allowance for a return on assets, regulatory depreciation and tax obligations

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) for its rural bulk water regulated business, which represents the economic value of the assets used to deliver its monopoly services
- the appropriate asset lives and depreciation method for WaterNSW's RAB for its bulk water services, and
- the appropriate rate of return (eg, using the WACC) on WaterNSW's RAB for bulk water services.

The sections below provide an overview of our decisions on these issues and the value of the RAB.

## 7.1 The value of the Regulatory Asset Base

We made a draft decision:

11 To set WaterNSW's opening Regulatory Asset Base (RAB) for its rural operations at the commencement of the determination period (1 July 2017) at $783.8 million (Table 7.1).

The RAB represents the value of WaterNSW's assets on which we consider it should earn a return on capital and an allowance for regulatory depreciation.[104] We have calculated the value of the RAB for each year of the 2017 determination period. Our RAB roll-forward calculations for the 2017 determination period are shown in Table 7.1 below.

[104] The RAB for each valley, other than the FRWS, was first set as of 1 July 2004 (line-in-the-sand). Since then, efficient and prudent capital expenditure has been added, depreciation deducted and indexation included. IPART, *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010*, September 2006, p 7.

**Table 7.1 Decision on WaterNSW total RAB for the 2017 Determination ($millions, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| Opening RAB | 783.8 | 818.2 | 851.6 | 860.6 |
| *Plus*: Efficient capital expenditure | 50.5 | 50.1 | 26.5 | 24.4 |
| *Less:* Regulatory depreciation | 15.3 | 16.1 | 16.7 | 17.2 |
| *Less:* Asset disposals | 0.8 | 0.6 | 0.8 | 0.6 |
| Closing RAB | 818.2 | 851.6 | 860.6 | 867.2 |

**Note:** Capital expenditure is net of external funding.
**Source:** IPART analysis.

### Reasons for our draft decision

#### Calculating the RAB over the 2017 determination period

We calculated the RAB in each year of the 2017 determination period by rolling forward the RAB to 2020-21 by:

- adding $151.5 million of prudent and efficient forecast capital expenditure to the opening RAB over the period (discussed in Chapter 5), and
- deducting:
  - $64.3 million for regulatory depreciation (see section 7.4).
  - $2.8 million for the regulatory value of forecast asset disposals (see section 7.2).

We used our forecast RAB to generate the return on capital and allowance for depreciation over the 2017 determination period.

Our calculation of the RAB for the 2017 determination results in a closing RAB that is $59.5 million lower than WaterNSW's proposal. Table 7.2 compares our decisions on the RAB to WaterNSW's proposal.

**Table 7.2 Draft Report closing RAB compared to WaterNSW proposal ($millions, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|---|
| WaterNSW proposal | 802.3 | 849.9 | 882.7 | 912.4 | 926.7 |
| IPART decision | 783.8 | 818.2 | 851.6 | 860.6 | 867.2 |
| Difference | -18.6 | -31.7 | -31.1 | -51.9 | -59.5 |
| Difference % | -2.3% | -3.7% | -3.5% | -5.7% | -6.4% |

**Source:** WaterNSW pricing proposal to IPART, June 2016; IPART analysis.

The main differences leading to a lower RAB than WaterNSW proposed are:

- our decisions to reduce WaterNSW's forecast capital expenditure by $44.2 million, and

- the use of actual inflation for 2015-16 of 1.0% in the RAB roll-forward, which reduced the 2016-17 opening RAB by around $8.5 million.

### Calculating the closing RAB for the 2010 Determination (for Coastal valleys) and 2014 Determination (for MDB valleys)

We have calculated the opening RAB for 2017-18 by rolling the RAB forward over the 2010 determination period for Coastal valleys and over the 2014 ACCC decision period for MDB valleys. For Coastal valleys, we started with the determined RAB at 1 July 2010. For MDB valleys, we commenced with the determined RAB at 1 July 2013. We then made the following adjustments for the relevant periods to 30 June 2017:

- added prudent and efficient capital expenditure (Chapter 6)
- deducted the regulatory value of asset disposals (section 7.2)
- deducted regulatory depreciation (section 7.4), and
- added the annual indexation of the RAB.

Our calculation of the opening RAB for the 2017 determination period for MDB and Coastal valleys is set out in Table 7.3 and Table 7.4 below.

**Table 7.3 RAB calculation for WaterNSW's MDB valleys over the 2014 ACCC decision period ($millions, $nominal)**

| | 2013-14 | 2014-15 | 2015-16 | 2016-17 |
|---|---|---|---|---|
| Opening RAB | 611.8 | 662.2 | 678.0 | 691.1 |
| *Plus:* efficient capital expenditure | 39.7 | 19.0 | 20.6 | 49.4 |
| *Less:* Regulatory depreciation | 8.3 | 13.3 | 14.4 | 15.5 |
| *Plus*: Indexation | 18.9 | 10.1 | 6.9 | 17.9 |
| Closing RAB | **662.2** | **678.0** | **691.1** | **743.0** |

**Note:** Capital expenditure is net of external funding.
**Source:** IPART analysis.

**Table 7.4 RAB calculation for WaterNSW's Coastal valleys over the 2010 determination period ($millions, $nominal)**

| | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 |
|---|---|---|---|---|---|---|---|
| Opening RAB | 31.1 | 32.8 | 33.7 | 35.5 | 37.1 | 37.6 | 38.2 |
| *Plus:* efficient capital expenditure | 0.9 | 0.8 | 1.2 | 0.8 | 0.3 | 0.5 | 2.0 |
| *Less:* Regulatory depreciation | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| *Plus*: Indexation | 1.1 | 0.4 | 0.8 | 1.1 | 0.6 | 0.4 | 1.0 |
| Closing RAB | **32.8** | **33.7** | **35.5** | **37.1** | **37.6** | **38.2** | **40.8** |

**Note:** Capital expenditure is net of external funding.
**Source:** IPART analysis.

## 7.2 Asset disposals

WaterNSW reported zero historical asset disposals for the previous determination periods for Coastal and MDB valleys. We have adopted WaterNSW's proposal on historical asset disposals for pricing purposes. We have deducted the value of any regulatory assets that WaterNSW proposes to dispose of during the 2017 determination period from the RAB. We did this to ensure that customers are not charged a return on assets or regulatory depreciation for assets that are no longer used to provide regulated services.

Disposals can include asset sales, write-offs and write-downs. We regard disposals as significant if they attract capital gains tax or account for more than 0.5% of the RAB.

We made draft decisions:

12 To deduct the regulatory value of actual and forecast asset disposals from the RAB, where the regulatory value is determined as:

- for significant sales of assets purchased before the RAB line-in-the-sand: asset sales revenue x RAB/DRC at the time the RAB was established
- for significant sales of assets purchased post RAB line-in-the-sand: purchase price + capital expenditure – depreciation + indexation
- for significant asset write-offs: determined on a case-by-case basis
- for non-significant write-offs: zero unless determined by exception on a case-by-case basis, and
- for non-significant asset sales: receipts from asset sales.

13 To adopt WaterNSW's reported figure of zero historical asset disposals for the previous determination periods for Coastal and MDB valleys.

14 To adopt WaterNSW's forecast asset disposals as outlined below in Table 7.5.

**Table 7.5 Draft decision on forecast asset disposals ($'000, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| Border | 4 | 3 | 4 | 4 |
| Gwydir | 124 | 100 | 128 | 104 |
| Namoi | 159 | 128 | 164 | 133 |
| Peel | 31 | 25 | 32 | 26 |
| Lachlan | 102 | 82 | 105 | 85 |
| Macquarie | 81 | 65 | 84 | 68 |
| Murray | 42 | 34 | 44 | 35 |
| Murrumbidgee | 118 | 95 | 122 | 99 |
| Lowbidgee | 0 | 0 | 0 | 0 |
| North Coast | 8 | 6 | 8 | 7 |
| Hunter | 8 | 6 | 8 | 7 |
| South Coast | 4 | 4 | 5 | 4 |
| Fish River | 78 | 62 | 80 | 65 |
| Total | 759 | 610 | 786 | 635 |

**Source:** WaterNSW Information Return, June 2016.

Our current approach to the treatment of asset disposals was outlined in our 2016 Sydney Water Final Report.[105] WaterNSW has forecast a small amount of asset disposals under the category of "Corporate Systems" of approximately $700 000 per year, which is all customer share.[106] Given the insignificant nature of the value of asset disposals, we will deduct the full forecast sales revenue from the RAB. This is in line with our position in the 2016 Sydney Water and Hunter Water price reviews, which stated that for asset sales which were valued at less than 0.5% of the opening RAB:

> …we will remove the receipt from sales from the RAB. We consider that this approach is simple to administer, particularly for disposals that represent a relatively small proportion of the utility's RAB (ie, less than 0.5%).[107]

Our draft decision is to adopt WaterNSW's forecast asset disposals for the 2017 Determination as outlined above in Table 7.5.

### Reasons for our draft decision

We have changed the way we treat asset disposals compared with our previous WaterNSW Rural (formerly State Water) determinations.

Our approach to asset disposals reflects our view that 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 are not affected. We consider this to be appropriate because the benefit customers received came from consuming the service, not from ownership of the asset. We consider that the impact of any profit or loss should lie entirely with the business (or shareholder).

Our policy on the regulatory treatment of asset disposals is set out in detail in Appendix H of our Final Report of our 2016 review of Sydney Water's prices.[108]

## 7.3 Return on capital

We have included an allowance for a return on assets in the revenue requirement. This represents our assessment of the opportunity cost of the capital invested to provide the regulated services. Our approach ensures that the business can continue to make efficient capital investments in the future.

To calculate this allowance, we multiplied the value of the RAB in each year of the determination period by an appropriate rate of return. To do this, we have determined the rate of return using a weighted average cost of capital (WACC).

105 IPART, *Review of prices for Sydney Water Corporation - Final Report*, June 2016, Appendix H, pp 283-287.
106 WaterNSW pricing proposal to IPART, June 2016, p 76.
107 IPART, *Review of prices for Sydney Water Corporation - Final Report*, June 2016, p 286.
108 IPART, *Review of prices for Sydney Water Corporation,* Final Report, June 2016, Appendix H, p 283.

We made draft decisions:

15 To apply a real post-tax WACC of 3.4% to calculate the return on WaterNSW's assets for MDB valleys.

16 To apply a real post-tax WACC of 4.9% to calculate the return on WaterNSW's assets for Coastal valleys.

17 To set an allowance for return on assets of $116.8 million over the 2017 determination period, as shown in Table 7.6.

18 To set an allowance for return on working capital at $0.86 million over the 2017 determination period.

Based on the RAB values set out in section 7.1 and our draft decisions to apply a real post-tax WACC of 3.4% for MDB valleys and 4.9% for Coastal valleys, the resulting return on assets (WACC% x RAB) is shown in Table 7.6.

**Table 7.6 Draft Report return on capital compared to WaterNSW proposal ($millions, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Total |
|---|---|---|---|---|---|
| WaterNSW proposal | 27.2 | 28.6 | 29.6 | 30.4 | 115.8 |
| IPART decision | 27.8 | 29.0 | 29.8 | 30.1 | 116.8 |
| Difference | 0.6 | 0.4 | 0.2 | -0.3 | 1.0 |
| Difference % | 2.4% | 1.4% | 0.7% | -0.9% | 0.9% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 62; IPART analysis.

We also made an allowance for a return on working capital, which represents the holding cost of net current assets. The allowance is $0.86 million over the four years of the 2017 determination period.

### 7.3.1 MDB valleys

We used the ACCC *Water Charge (Infrastructure) Rules 2010* (WCIR) methodology to calculate the WACC for WaterNSW's MDB valleys. That methodology stipulates the use of a market risk premium of 6.0%, equity beta of 0.7 and gearing of 60%.

We used the following sampling dates for market observations:

- Nominal risk free rate sampled to 19 January 2017
- Inflation forecast based on the November 2016 RBA Statement on Monetary Policy
- Debt margin sampled to the end of December 2016.

These sampling dates and 40 day trailing averages are consistent with the ACCC WCIR method, which does not precisely specify these matters.

The table below shows our WACC calculation for the MDB valleys, and compares it to the WaterNSW proposed WACC calculation.

**Table 7.7 WACC for MDB valleys**

| | ACCC MANDATED METHODOLOGY | |
|---|---|---|
| | **WaterNSW proposal** | **IPART DR** |
| Nominal risk free rate | 2.4% | 2.8% |
| Inflation | | 2.4% |
| Debt margin incl debt raising cost | | 2.5% |
| Debt margin excl debt raising cost | 2.9% | 2.4% |
| Market risk premium | 6.0% | 6.0% |
| Debt funding | 60% | 60% |
| Equity funding | 40% | 40% |
| Equity beta | 0.70 | 0.70 |
| | | |
| Cost of equity (nominal post-tax) | 6.6% | 7.0% |
| Cost of equity (real post-tax) | | 4.5% |
| Cost of debt (nominal pre-tax) | 5.4% | 5.2% |
| Cost of debt (real pre-tax) | | 2.7% |
| | | |
| Nominal Vanilla (Post-tax nominal) WACC | 5.9% | 5.9% |
| **Post-tax real WACC** | **3.2%** | **3.4%** |

**Note:** In its pricing proposal, WaterNSW proposed a nominal risk free rate of 2.4% and a debt margin of 2.9%. This gives a nominal pre-tax cost of debt of 5.3%. However, it had also listed the nominal pre-tax cost of debt as 5.4%. The difference is due to rounding.

**Source:** WaterNSW pricing proposal to IPART, pp 78-79; IPART analysis.

There are differences between our calculation and WaterNSW in the nominal risk free rate and the debt margin. These differences arise because different sampling dates were used. However, the changes cancel each other out. As a result, the nominal post-tax WACC we calculate is the same as that proposed by WaterNSW.

### 7.3.2 Coastal valleys

We used our standard methodology to calculate the WACC for WaterNSW's Coastal valleys.[109] This methodology was updated twice since 2013. In April 2014, we adopted a new approach to estimating the cost of debt.[110] In March 2015, we adopted a new approach to forecasting the inflation adjustment.[111]

109 IPART, *Review of WACC Methodology, Final Report*, December 2013, https://www.ipart.nsw.gov.au/Home/Industries/Special-Reviews/Reviews/WACC/Review-of-method-for-determining-the-WACC/09-Dec-2013-Final-Report/Final-Report-Review-of-WACC-Methodology-December-2013

110 IPART, WACC – IPART's New Approach to Estimating the Cost of Debt, Fact Sheet, April 2014, https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/fact_sheet_-_iparts_new_approach_to_estimating_the_cost_of_debt_-_april_2014.pdf

111 IPART, *New Approach to Forecasting the WACC Inflation Adjustment*, Fact Sheet, *March 2015*, https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/fact_sheet_-_new_approach_to_forecasting_the_wacc_inflation_adjustment_-_march_2015.pdf

Under this methodology, we estimate one WACC based on current market data and one based on long-term average data. When our uncertainty index, which indicates the level of volatility in capital markets, is within one standard deviation of its mean value, we select the midpoint of the current and long-term WACC values. The uncertainty index is currently within this range.

We used the following sampling dates for market observations:

- Nominal risk free rate sampled to 19 January 2017
- Inflation forecast based on the November 2016 RBA Statement on Monetary Policy
- Debt margin sampled to the end of December 2016
- Market risk premium sampled to the end of December 2016
- Inputs to the uncertainty index sampled to the end of December 2016.

The table below shows the WACC parameters that were used to derive the 4.9% post-tax real WACC for WaterNSW's Coastal valleys.

**Table 7.8 WACC for Coastal valleys**

| | Current market data | Long-term averages | Final WACC range | | |
|---|---|---|---|---|---|
| | | | Lower | Midpoint | Upper |
| Nominal risk free rate | 2.8% | 4.3% | | | |
| Inflation | 2.4% | 2.4% | | | |
| Debt margin | 2.5% | 3.2% | | | |
| Market risk premium | 9.1% | 6.0% | | | |
| Debt funding | 60% | 60% | | | |
| Equity funding | 40% | 40% | | | |
| Total funding (debt+equity) | 100% | 100% | | | |
| Gamma | 0.25 | 0.25 | | | |
| Corporate tax rate | 30% | 30% | | | |
| Effective tax rate for equity | 30% | 30% | | | |
| Effective tax rate for debt | 30% | 30% | | | |
| Equity beta | 0.70 | 0.70 | | | |
| Cost of equity (nominal post-tax) | 9.2% | 8.5% | | | |
| Cost of equity (real post-tax) | 6.6% | 6.0% | | | |
| Cost of debt (nominal pre-tax) | 5.3% | 7.5% | | | |
| Cost of debt (real pre-tax) | 2.8% | 5.0% | | | |
| Nominal Vanilla (Post-tax nominal) WACC | 6.8% | 7.9% | 6.8% | 7.4% | 7.9% |
| Post-tax real WACC | 4.3% | 5.4% | 4.3% | 4.9% | 5.4% |
| Pre-tax nominal WACC | 7.9% | 8.9% | 7.9% | 8.4% | 8.9% |
| Pre-tax real WACC point estimate | 5.4% | 6.3% | 5.4% | 5.9% | 6.3% |

**Source:** IPART analysis.

This WACC calculation is consistent with WaterNSW's pricing proposal. The minor differences in the post-tax nominal WACC (WaterNSW proposed 7.5%) can be explained by changes to the input parameters since our February 2016 market update, which WaterNSW used for its calculation. The post-tax real WACC proposed by WaterNSW is the same as our draft decision.

## 7.4 Regulatory depreciation

An allowance for regulatory depreciation is included in the revenue requirement (and used in calculating the value of the RAB, as discussed above). This is intended to ensure that the capital invested in the regulatory assets is returned over the useful life of each asset.

We have calculated this allowance by determining the appropriate asset lives for the assets in WaterNSW's RAB and the appropriate depreciation method to use.

We made draft decisions:

19 To use:

- a straight-line depreciation method for the 2017 determination period
- for existing assets, the rolled forward asset lives from IPART's 2010 determination and the ACCC's 2014 determination, as outlined in Table 7.9
- for new assets, the asset lives listed in Table 7.11.

20 To set WaterNSW's allowance for regulatory depreciation at $64.3 million over the 2017 determination period (Table 7.12).

### 7.4.1 Reasons for our draft decision

Depreciation method

The approach to depreciation set out in the ACCC's WCIR pricing principles states:

> Fixed assets should be depreciated using a straight-line methodology. However, the regulator or the operator may adopt a different approach to depreciation where an operator can justify departure from this method or where it is appropriate for the regulator to do so. Where a different approach is used, the net present value (NPV) to the business must be the same as under a straight-line methodology.[112]

As set out in the ACCC's WCIR pricing principles and as done for previous determinations and decisions, we recommend using the straight-line depreciation method. Under this method, the assets in the RAB are depreciated by an equal value in each year of their economic life, so that their real written down value follows a straight line over time, from the initial value of the asset to zero at the end of the asset's life.

We consider this method is superior to alternatives in terms of simplicity, consistency and transparency.

112 ACCC, *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010*, July 2011, p. 45.

### Asset lives for existing assets

We typically calculate the remaining lives of existing assets by rolling forward our previous determination.

In its pricing proposal, WaterNSW used the **approximate** historical asset lives of those set by the ACCC in the 2014 decision, rather than actual.[113]

For the remaining lives of existing assets, we have adopted our typical approach, and rolled forward asset lives from the previous determination, namely:

- IPART's 2010 Determination for Coastal valleys, and
- ACCC's 2014 Decision for Murray-Darling Basin valleys.

Our analysis shows that this results in asset lives broadly in line with those used by WaterNSW in generating its proposed prices. Our draft decision on asset lives for existing assets is shown below in Table 7.9.

**Table 7.9 Draft decision on asset lives for existing assets (years)**

| Valley | User RAB | Government RAB |
|---|---|---|
| Border | 35 | 52 |
| Gwydir | 58 | 56 |
| Namoi | 53 | 57 |
| Peel | 59 | 70 |
| Lachlan | 51 | 55 |
| Macquarie | 56 | 58 |
| Murray | 42 | 45 |
| Murrumbidgee | 40 | 38 |
| Lowbidgee | 94 | NA |
| North Coast | 97 | 113 |
| Hunter | 99 | 129 |
| South Coast | 101 | 111 |
| Fish River | 47 | NA |

**Note:** Valleys with NA have no government share of the RAB.
**Source:** IPART analysis.

### Asset lives for new assets

WaterNSW provided expected lives of new assets by activity. These are set out in Table 7.10 below.

113 WaterNSW Information Return, June 2016.

**Table 7.10 Asset lives proposed by WaterNSW for new assets by activity**

| Activity | Expected asset life |
|---|---|
| Water delivery and other operations | 6 |
| Flood Operations | 15 |
| Routine Maintenance | 80 |
| Asset Management Planning | 80 |
| Dam Safety Compliance | 100 |
| Environmental Planning and Protection | 80 |
| Corporate Systems | 6 |
| Renewal and Replacement | 80 |
| Dam safety compliance on pre 1997 capital projects | 100 |

**Source:** WaterNSW Information Return, June 2016.

We then weighted these asset lives by activity in accord with our decisions on the efficient level of WaterNSW's capital expenditure (including customer cost shares) to derive the expected asset life for new assets on a by valley and customer and government share basis. Our draft decision on the asset lives calculated using this method is presented in Table 7.11.

**Table 7.11 Draft decision on asset lives for new assets (years)**

| Valley | User RAB | Government RAB |
|---|---|---|
| Border | 62 | 80 |
| Gwydir | 39 | 76 |
| Namoi | 30 | 100 |
| Peel | 40 | 91 |
| Lachlan | 60 | 80 |
| Macquarie | 57 | 77 |
| Murray | 56 | 80 |
| Murrumbidgee | 65 | 79 |
| Lowbidgee | 80 | 0 |
| North Coast | 61 | 80 |
| Hunter | 62 | 80 |
| South Coast | 67 | 80 |
| Fish River | 63 | 0 |

**Source:** IPART analysis.

Based on the RAB values set out in section 7.1 and our draft decisions on asset lives presented above, the resulting regulatory depreciation is shown in Table 7.12.

**Table 7.12 Draft Report return of capital compared to WaterNSW proposal ($millions, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Total |
|---|---|---|---|---|---|
| WaterNSW Proposal | 15.1 | 16.0 | 16.8 | 17.5 | 65.5 |
| IPART decision | 15.1 | 15.8 | 16.5 | 16.9 | 64.3 |
| Difference | -0.1 | -0.2 | -0.4 | -0.6 | -1.2 |
| Difference % | -0.6% | -1.2% | -2.2% | -3.2% | -1.9% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 62; IPART analysis.

## 7.5 Allowance for tax

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

The tax allowance is one of the last building block items we calculate, due to its dependence on the notional revenue requirement (excluding tax).

We made a draft decision:

21 To adopt the regulatory tax allowance as set out in Table 7.13.

**Table 7.13 Draft decision on regulatory tax allowance compared to WaterNSW proposal ($millions, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Total |
|---|---|---|---|---|---|
| WaterNSW proposed | 1.3 | 1.4 | 1.5 | 1.5 | 5.7 |
| IPART decision | 0.8 | 0.8 | 0.9 | 1.0 | 3.5 |
| Difference | -0.6 | -0.6 | -0.5 | -0.5 | -2.2 |
| Difference % | -43.4% | -39.8% | -37.0% | -35.4% | -38.7% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 62; IPART analysis.

### 7.5.1 Reasons for decision

We calculate the tax allowance for each year by applying a 30% statutory corporate tax rate adjusted for franking credits to the business's (nominal) taxable income.[114] For this purpose, taxable income is the notional revenue requirement (excluding tax allowance) less operating cost allowances, tax depreciation, and interest expenses.

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 expenses are based on the parameters used for the WACC, and the value of the RAB.[115]

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

115 The nominal cost of debt is the sum of the nominal risk free rate and nominal debt margin.

WaterNSW proposed a tax allowance of $5.7 million for the 2017 determination period. Our decision is to include a tax allowance of $3.5 million, which is $2.2 million lower than WaterNSW's proposal. We have used a higher tax depreciation than that proposed by WaterNSW.[116] This has reduced the overall tax allowance as well as changed the distribution of tax allowance across valleys from that proposed by WaterNSW.

116 As part of its pricing proposal, WaterNSW did not include tax depreciation for the Peel, Murumbidgee and FRWS. We have included tax depreciation on existing assets in our calculation of the regulatory tax allowance.

# 8 Other costs

This chapter outlines our draft decisions on a number of cost items, which are in addition to those usually included in the building block. These include MDBA and BRC costs, the unders and overs mechanism (UOM) and its balance, and a revenue volatility allowance.

## 8.1 MDBA and BRC costs

The Murray-Darling Basin Authority (MDBA) and the Dumaresq-Barwon Border Rivers Commission (BRC) are cross-jurisdictional bodies that co-ordinate and manage water resource management and bulk water activities from a 'whole of system' perspective.

- The BRC was established under the provisions of the *New South Wales-Queensland Border Rivers Agreement 1946*. The agreement between the NSW and Queensland Governments specifies arrangements for the operation and maintenance of shared assets and water sharing in the border region. The BRC implements the agreement on behalf of the two states.
- The MDBA is a Commonwealth statutory agency empowered by the *Water Act 2007* (Cwth) that operates the River Murray system in the southern Murray–Darling Basin, which includes dams, weirs, locks, environmental works and salt interception schemes.

The costs of construction, operation and maintenance of assets under the MDBA's and BRC's arrangements are jointly paid for by the signatory States.[117] The costs are allocated to each State in a proportion defined under the terms of the agreement. The NSW Government pays the NSW share of these costs to the MDBA and the BRC.

The BRC's activities, and hence the contributions to them, apply in the Border valley; while the MDBA's activities are undertaken in the Murray and Murrumbidgee valleys.

During the 2014 ACCC Decision, the NSW Treasurer issued a direction to State Water under section 59B of the *Public Finance and Audit Act 1983* (NSW) (PFA Act) to pay to the Consolidated Fund, by way of dividend, amounts equal to the BRC and MDBA costs. In its 2014 Decision, the ACCC concluded that the recovery of these costs was a "regulatory obligation" for State Water (given the direction from the NSW Treasurer) and allowed these costs to be passed directly through to customers.[118]

WaterNSW has incorporated BRC and MDBA costs in its pricing proposal based on advice from DPI Water about the maximum charges the NSW Government will require from WaterNSW during the 2017 determination period. WaterNSW flagged that it anticipates receiving a direction from the Treasurer under the PFA Act for the 2017 determination period.[119] At the time of publication, WaterNSW is yet to receive this direction.

117 The NSW and Queensland Governments for the BRC, and the Commonwealth, NSW, Victorian and South Australian Governments for the MDBA.
118 ACCC, *Final decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, p 9.
119 WaterNSW pricing proposal to IPART, June 2016, p 17.

WaterNSW has proposed recovering MDBA and BRC costs via an annual 100 per cent fixed entitlement charge and adjusting the high security premium applied to MDBA and BRC costs.[120] Our draft decisions on these proposed changes are outlined in Chapter 11.

We made draft decisions:

22 To:

- apply a 1.25% per annum, compounded, efficiency factor to proposed BRC and MDBA costs to be passed through to customers in the Border, Murray and Murrumbidgee valleys (see Table 8.1)
- discontinue the Unders and Overs Mechanism for MDBA and BRC costs and smooth recovery of the current balance over the 2017 determination period.

Table 8.1 summarises the MDBA and BRC costs resulting from our draft decisions.

**Table 8.1 Draft decision on MDBA/BRC pass through costs ($'000, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| **MDBA** | | | | |
| Customer share[a] | 17,936 | 13,564 | 12,858 | 12,685 |
| Government share | 2,647 | 4,330 | 4,306 | 4,248 |
| Customer share % | 87% | 76% | 75% | 75% |
| **BRC** | | | | |
| Customer share[a] | 685 | 700 | 688 | 679 |
| Government share | 401 | 372 | 370 | 365 |
| Customer share % | 63% | 65% | 65% | 65% |

**a** Customer share excludes recovery of the remaining UOM balance over the four years of the determination.

**Source:** IPART analysis.

### 8.1.1 We have applied an efficiency adjustment to MDBA and BRC costs

WaterNSW proposed to pass through MDBA and BRC costs to users of around $61.65 million over the four years of the 2017 determination period.[121] These costs represent a significant share of total customer share NRR proposed by WaterNSW. On average, proposed BRC costs represented 35% of total proposed customer share NRR for the Border valley, and proposed MDBA costs represented 69% and 22% of total proposed customer share NRR for the Murray and Murrumbidgee valleys, respectively.

Submissions to our Issues Paper and public hearings indicated a high degree of dissatisfaction among stakeholders with the lack of transparency in the development of MDBA costs.[122] Stakeholders argued that the lack of transparency means WaterNSW customers cannot assess the efficiency or validity of costs they are required to fund. They called for IPART to undertake an efficiency review or apply an efficiency dividend to these

120 WaterNSW pricing proposal to IPART, June 2016, pp 145-146.
121 WaterNSW pricing proposal to IPART, June 2016, Table 106, p 145.
122 Concerns were raised by NSWIC, Murrumbidgee Irrigation, Coleambally Irrigation, Murray Irrigation, Murray Lower Darling CSC. NSWIC also raised similar concerns about BRC costs.

costs. Stakeholders have expressed similar concerns to our past reviews of State Water's bulk water prices.[123]

We asked Aither to conduct a high-level review of MDBA costs.[124] Aither found the MDBA was generally able to explain its processes for promoting prudence and efficiency and did not identify any glaring issues. Aither also found that in allocating costs between customers and the Government within NSW, DPI Water had applied IPART's existing cost share framework.[125]

Within the high level scope of the review, Aither did not have sufficient evidence to identify any specific reductions in MDBA costs. It found that the reductions to asset renewals in its broader review of WaterNSW's expenditure (see Chapter 6) could not be applied to MDBA costs, as WaterNSW applies different processes to manage its own assets relative to the management of MDBA assets. It also did not find any clear or systematic evidence of MDBA overestimating expenditure in outyears and subsequently reducing estimates via the annual budget process.

However, Aither noted its findings should not be considered a definitive assessment that MDBA expenditure is prudent and efficient. Further, it identified some issues with historical underspend, documentation in support of proposed expenditures, and processes for developing, refining and approving capital expenditures. Aither made a number of suggestions for improving the MDBA's processes to ensure expenditure passed on to users was prudent and efficient (Box 8.1). Aither noted that many of its suggestions echoed recommendations in past reviews that MDBA is in the process of implementing.

Aither suggested IPART may consider applying a top-down or global efficiency target on the premise that all businesses in competitive markets need to continually improve their efficiency. In this regard, Aither noted that MDBA expenditure is based on costs developed by state water utilities (including WaterNSW) that are subject to economic regulation, and the MDBA has additional processes that help ensure efficiency. However, this is offset by the limited transparency around expenditure and the reduced incentives and checks to only propose efficient and prudent expenditure.[126]

Aither also recommended that IPART argue the case to the NSW Government that:

- MDBA expenditure is subject to periodic independent public review, to provide much needed transparency to customers
- WaterNSW should be subject to incentives to out-perform historical levels of operating expenditure, and
- cost sharing arrangements and processes within NSW need to provide a greater degree of transparency.[127]

123 See for example, IPART, *Review of bulk water charges for State Water Corporation: From 1 July 2010 to 30 June 2014*, June 2010, p 63.
124 Aither, *A review of MDBA expenditure and cost sharing in New South Wales*, February 2017.
125 Aither did not review BRC costs as detailed information was not available. BRC costs are based on a historical contribution of $1.1 million per annum (split between WaterNSW and DPI Water), which must be maintained.
126 Aither, *A review of MDBA expenditure and cost sharing in New South Wales*, February 2017, p vi.
127 Aither, *A review of MDBA expenditure and cost sharing in New South Wales*, February 2017, p v.

While Aither did not have sufficient information to identify any specific reductions to MDBA costs, we have continuing concerns about the lack of independent scrutiny in the development of MDBA costs. We also appreciate the concerns raised by users that insufficient transparency means there is no assurance that only prudent and efficient costs are passed through. Indeed, while Aither's review found the process was generally sound, it was unable to verify that these costs are efficient.

Therefore, our draft decision is to apply an efficiency adjustment of 1.25% compounded per annum to these costs. We applied the same efficiency factor to MDBA costs in our 2006 and 2010 Determinations of State Water's bulk water charges.[128]

**Box 8.1 Aither's suggested improvements to MDBA cost development**

- Clearer requirements about when a business case is required, such as a clearly established dollar value (or similar metrics) to trigger a requirement for a business case.
- Minimum requirements or standards for expenditure justification under the program, such as general requirements to clearly investigate alternative options, cost proposals to a certain confidence level, or to complete business cases with minimum requirements.
- Clearer roles and responsibilities for development and completion of business cases, including which agencies lead their development, and how these should be resourced (e.g. via WaterNSW's (and other state constructing authority's) operational expenditure within the program, MDBA operating expenditure, or otherwise).
- A greater level of rigour around justifying proposals for operating expenditure, noting the MDBA advised that significant changes in operating expenditures would be tested.
- Greater requirements placed upon WaterNSW (and other state constructing authorities) to justify (including providing documentation for) expenditures that do not require a formal business case (noting the additional resources this may require).
- Modifying the committee structure so that there is a more formal and independent review of planned expenditures (based on better documented submission).
- Placing codified requirements into the committee structures (e.g. Terms of Reference) or other governance processes to explicitly require that only demonstrably prudent and efficient expenditures are included in the annual corporate plan and budget.
- Codifying and documenting the role the MDBA plays in verifying the prudence and efficiency of planned expenditure.
- Considering modifications to the various agreements that give effect to the roles of the MDBA, WaterNSW and other state constructing authorities, to explicitly require prudent and efficient asset expenditure.

**Source:** Aither, *A review of MDBA expenditure and cost sharing in New South Wales*, February 2017, pp 23-26.

### 8.1.2 We have smoothed the remaining UOM balance over the determination

The 2014 ACCC Decision established a separate Unders and Overs Mechanism (UOM) for MDBA and BRC revenue, which allows WaterNSW to recover any revenue shortfall arising from variation in water usage for each valley.[129] WaterNSW currently faces an under-

128 IPART, *Review of bulk water charges for State Water Corporation: From 1 July 2010 to 30 June 2014*, June 2010, p 64.

129 ACCC, *Final decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, p 75.

recovery of around $2 million for MDBA and BRC costs, and proposes to recover the outstanding amount by adding the UOM balance to MDBA and BRC charges, smoothed over each of the four years of the 2017 determination period.[130]

Our draft decision is to accept this proposal as the ACCC passed through the MDBA and BRC costs on the basis that these costs represent a 'regulatory obligation' that WaterNSW cannot control. And, smoothing recovery of the balance over four years will reduce bill impacts, compared with the mechanism established by the ACCC.[131]

However, as outlined below, we have also decided to discontinue the UOM.

## 8.2 The unders and overs mechanism (UOM)

In its 2014 Decision, the ACCC introduced a UOM for most of the Murray-Darling Basin valleys, to address WaterNSW's revenue volatility risk.[132] This risk arises because WaterNSW's tariff structure (which is mostly 40:60 fixed to variable) does not match its cost structure (which is largely fixed), and water sales volumes can be volatile and difficult to forecast.

The ACCC's UOM uses an unders and overs account, which is a running balance of annual differences between actual and target revenues. An allowance is calculated using the overs-and-unders balance multiplied by WaterNSW's WACC. During the determination period, at each annual review, if the balance contains a surplus (ie, there have been higher than expected revenues to date), charges in the subsequent year would generally be reduced by the allowance (the surplus multiplied by the WACC). If the UOM balance contains a shortfall (ie, there have been lower than expected revenues to date), charges in the subsequent year would generally increase.[133] This UOM means prices reflect the holding cost of the account balance.[134]

The mechanics of the UOM are:

- Differences in actual versus expected revenue (from both fixed and usage charges)[135] are recorded in an account.
- The account balance is multiplied by a *nominal* WACC and the resulting value is then reflected in the subsequent year's NRR, and included in prices through the annual updates process (in both fixed and usage charges).

130 WaterNSW anticipates an under-recovery of $3 million at the end of the current determination period due to lower than forecast usage. WaterNSW pricing proposal to IPART, June 2016, p 145.

131 Unlike the UOM the ACCC established for prices for bulk water services (which was ongoing, with prices in each year reflecting the holding cost of the account balance), the full revenue shortfall of the UOM for MDBA and BRC costs was to be recovered (or paid back) in the subsequent regulatory year.

132 The UOM currently applies to the Border, Gwydir, Namoi, Lachlan, Macquarie, Murray, Murrumbidgee and Fish River. It currently does not apply to the Peel, Lowbidgee, North Coast, South Coast and Hunter valleys. ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17,* June 2014, p 68.

133 Due to updates in forecast demand (ie, the 20-year rolling average), a surplus balance in the UOM, may not lead to a decrease in prices in the following year, vice-versa.

134 However, for the MDBA/BRC costs, the UOM operates such that the amount in the account balance, in addition to the holding cost, is reflected in subsequent years' prices. ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 75-77.

135 The UOM is applied to total revenue from users, including both revenue from entitlement charges and usage. However, it is usage revenue that usually varies substantially. ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, p 22.

We made draft decisions:

23 To discontinue the UOM.

24 With the exception of the Fish River Water Supply Scheme (FRWS), to pay out the balance of the UOM, with prices in each valley including a return on the outstanding balance, and a partial return of the remaining balance each year.

25 To set the UOM balance attributable to the Wallerawang power station component of the FRWS to zero.

### 8.2.1 Reasons for decision

We consider that the UOM does not materially reduce the revenue volatility risk faced by WaterNSW. We also consider that the negative UOM balance at 30 June 2017 should be recovered from customers through prices.

#### WaterNSW's has proposed to maintain the UOM

WaterNSW proposes to maintain the UOM. However, it argues that the UOM does not materially reduce revenue volatility and that the WACC is not a fair reflection of the holding cost of a negative UOM balance. It states that it:

> …cannot be expected to raise additional funds cheaply due to the indeterminate period of any source of finance.[136]

Conversely, it also argues that due to the variable balance in the UOM account, the return that it can earn on that balance is *lower* than the WACC. Therefore, it submitted that due to the indeterminate period, a reasonable expected return on the UOM balance will be at the short-term risk free investment rate.

WaterNSW proposes that from 2017-18, in addition to continuing the UOM, its bulk water prices include the cost of a risk transfer product to mimic an 80:20 fixed to variable tariff structure (see Section 8.3 below).

136 WaterNSW pricing proposal to IPART, June 2016, p 38.

WaterNSW's balances for the UOM, as at 1 July 2016, are set out in Table 8.2 below.[137]

**Table 8.2 UOM balance as at 1 July 2016 ($millions, $2016-17)**

| Valley | Balance |
|---|---|
| Border | -$1.0 |
| Gwydir | -$2.4 |
| Namoi | -$3.0 |
| Lachlan | -$1.7 |
| Macquarie | -$5.4 |
| Murray | -$0.7 |
| Murrumbidgee | -$0.7 |
| Fish River | -$4.6 |
| **Total** | **-$19.5** |

**Note:** These figures are represent the UOM balance as at 1 July 2016.
**Source:** WaterNSW pricing proposal to IPART, June 2016, p 36.

### We consider that there are better ways to manage volatility

We agree with WaterNSW that it faces revenue risk associated with unpredictable water sales. We consider, however, that the UOM does not materially ameliorate volatility or the risk associated with variability. As a result, we have decided to discontinue the UOM, and instead introduce a volatility allowance, which is a premium included in prices to reflect WaterNSW's exposure to undue revenue volatility risk.

Our volatility allowance would enable WaterNSW to manage the risk associated with having a 40:60 fixed to variable price structure relative to an 80:20 fixed to variable price structure – which it sought through the inclusion of a risk transfer product. We note that our draft decision to discontinue the UOM means that WaterNSW is exposed to revenue volatility risk, over the long term, for the remaining 20% of revenues. We consider it appropriate for WaterNSW to bear some revenue volatility risk, as business revenues are not guaranteed in competitive markets.

The volatility allowance is discussed in Section 8.3 below.

### The outstanding UOM balance would be returned to WaterNSW through prices

Over the ACCC's 2014 determination period, the UOM was the key mechanism for managing volatility risk. As such, we consider that the UOM balance, which we intend to update between the Draft and Final Reports to reflect usage over 2016-17 (to the extent available)[138], should be returned to WaterNSW through an adjustment to prices, with an exception in the Fish River Water Supply (FRWS).

For our draft prices, we have applied the increase required to both high security (HS) and general security (GS) entitlement charges in proportion to the respective contributions that

137 The holding cost for these balances would usually be added into the customer share of the NRR for each valley and reflected in both entitlement and usage prices.
138 At the 2021 price review, we will examine variations in total actual usage of 2016-17, to potentially incorporate into prices in that review.

HS and GS sales made to the balances in the UOM over the 2014-15 and 2015-16 period (the period in which the balances were generated).

We have used the residual of the average percentage of water allocated to HS and GS entitlement charges over 2014-15 and 2015-16 as a *proxy* for HS and GS contributions to the UOM balances. This results in a small application of the UOM balances to HS entitlement charges for the Murray and Murrumbidgee. Over 2014-15 and 2015-16:

- HS customers in Murray and Murrumbidgee received 97% and 96% of their allocations respectively ie, the amounts not allocated were 3% and 5% respectively, and
- GS customers in Murray and Murrumbidgee received 47% and 52% of their allocations respectively ie, the amounts not allocated were 54% and 49% respectively.

Re-weighting the above amounts not allocated, results in a 5% allocation of the UOM balance to HS customers in the Murray, and an 8% allocation of the UOM balance to HS customers in the Murrumbidgee.[139]

We show the amounts in Table 8.3 below.

**Table 8.3 Unders and Overs allocation to High Security and General Security entitlements per valley ($2016-17)**

| | UOM Balance 1 July 2016 | Percentage allocated to GS entitlements | Percentage allocated to HS entitlements | Amount to be recovered from GS entitlements | Amount to be recovered from HS entitlements |
|---|---|---|---|---|---|
| Border | -1,032,532 | 100% | 0% | 1,032,532 | 0 |
| Gwydir | -2,432,163 | 100% | 0% | 2,432,163 | 0 |
| Namoi | -3,039,156 | 100% | 0% | 3,039,156 | 0 |
| Lachlan | -1,704,504 | 100% | 0% | 1,704,504 | 0 |
| Macquarie | -5,375,891 | 100% | 0% | 5,375,891 | 0 |
| Murray | -671,727 | 95% | 5% | 636,060 | 35,667 |
| Murrumbidgee | -675,785 | 92% | 8% | 618,407 | 57,378 |

**Note:** Excludes FRWS UOM.

**Source:** IPART analysis.

Given that the balance of the UOM differs between valleys, some valleys will require a lower percentage increase in entitlement charges to address existing balances (eg, the Murray and Murrumbidgee), whereas other valleys such as the Macquarie will require a higher percentage increase given its relatively large balance.

To maintain relatively stable prices between the Draft and Final Determination and for simplicity, we applied an increase of no more than about 28% to entitlement charges in 2017-18 and maintained this increase in real terms throughout the determination period. This would result in outstanding balances to be recovered in subsequent determination periods, with the exception of the Murray and Murrumbidgee valleys.

139 For example, the 5% allocation of the UOM balance to HS customers in the Murray has been calculated 3%/(3%+54%).

Between the Draft and Final Reports we will incorporate an update in the UOM balances to reflect usage over 2016-17 (to the extent available). This may change the increase required in prices in 2017-18 (and maintained in real terms throughout the determination period).

**Most of the UOM balance in Fish River Water Supply (FRWS) has been written off**

In 2014, EnergyAustralia announced the closure of the Wallerawang power station. This single customer accounted for around 45% of total water usage in the FRWS.

The design of the UOM meant that the loss of almost half of the usage revenue in FRWS led to a large and growing negative UOM balance. We provide a break-down of the UOM balance of $4.6 million for the Fish River in Table 8.4 below.

**Table 8.4 UOM balance for Fish River Water Supply ($2016-17)**

| | Balance as at 1 July 2016 |
|---|---|
| Raw water | |
| EnergyAustralia - Mt Piper | *$792,717* |
| EnergyAustralia - Wallerawang | ***$3,170,866*** |
| Others (eg, SCA, Oberon Council and Individual minor customers) | *$261,066* |
| Sub-total (raw water) | $4,224,649 |
| Filtered water | |
| Lithgow Council and Individual minor customers | *$354,264* |
| Sub-total (filtered water) | $354,264 |
| Total (raw and filtered water) | $4,578,914 |

**Source:** IPART's estimate of the UOM balance attributable to Wallerawang using recent available usage data from WaterNSW.

We consider the shutdown of Wallerawang power station represents a structural change in water consumption, which is different to ordinary climate volatility and represents a step change to a new permanent lower level of usage. We do not consider that it is appropriate for the general customer base to bear the resulting shortfall in usage revenue.

Given the large UOM balance in the FRWS is primarily a result of structural change, and not of weather or climate driven variability, we consider that the balance attributable to the closure of Wallerarwang power station should be written off. This removes around $3.2 million from the balance as at 1 July 2016.

The remaining UOM balance to be recovered from raw water customers is about $1.1 million. For filtered water customers, the existing balance is about $0.4 million.

We have decided to apply:

- **(raw water)** about a 6% real increase in MAQ prices in Year 1 and maintain this in real terms throughout the determination period to address the $1.1 million UOM balance in full over the upcoming period.
- **(filtered water)** about an 8% real increase in MAQ prices in Year 1 and maintain this in real terms throughout the determination period to address the $0.4 million UOM balance in full over the upcoming period.

## 8.3 We have included costs which reflect volatility risk

WaterNSW's costs are largely fixed, whereas around 60% of its revenue in most valleys is raised through its usage charges. This difference between its cost structure and its tariff structure, combined with the difficulty in accurately forecasting water extractions, means that WaterNSW is exposed to revenue volatility and hence some financial risk.

In its 2014 decision, the ACCC introduced the UOM as a mechanism for managing the financial impacts of revenue variability caused by variations in bulk water sales. As discussed in section 8.2 above, we have decided to discontinue the UOM and introduce a volatility allowance.

This allowance recognises the risk associated with revenue variability, and means that customers pay a cost-reflective premium where prices are set to recover more than 20% of revenue in a valley through usage charges. As previously mentioned, we note that our draft decision to discontinue the UOM and instead provide a volatility allowance means that WaterNSW is effectively exposed to revenue volatility risk, over the long term, for 20% of its revenues. We consider it appropriate for WaterNSW to bear some revenue volatility risk, as business revenues are not guaranteed in competitive markets.

We made a draft decision:

26 To include a revenue volatility allowance in entitlement charges (totalling $0.765 million per year) for valleys that are at cost recovery and have a fixed to variable price ratio that is less than 80:20.

### 8.3.1 WaterNSW has proposed purchasing a Risk Transfer Product (RTP)

WaterNSW argues that its current tariff structures, 40:60 fixed to variable in most valleys, exposes it to an unreasonable amount of revenue volatility risk. Hence, it has proposed the inclusion of a Risk Transfer Product (RTP) of $3.6 million ($2016-17) to be applied to GS entitlement charges, as it considers revenue from GS customers to be the main source of revenue variability.[140, 141]

WaterNSW proposes the RTP apply to valleys that are at cost recovery and with fixed to variable tariff structure ratios of less than 80%.[142, 143] It also proposes to allocate the cost to the 9 valleys, based on their relative revenue volatility.[144] The RTP:

- Is in addition to its proposal to continue the UOM. WaterNSW argues that the UOM does not materially address the year-to-year volatility in revenues.

140 WaterNSW Information Return, June 2016.
141 WaterNSW pricing proposal to IPART, June 2016, p 41.
142 There are 9 Valleys proposed to be included – Border, Gwydir, Namoi, Peel, Lachlan, Macquarie Murray, Murrumbidgee, Hunter. Fish River Water Supply is not included because we have set the fixed to variable ratio 80:20 fixed to variable. North Coast and South Coast are not included because prices are below the level required to achieve full cost-recovery.
143 The costs of the volatility allowance is proposed to be allocated proportionally to the Hunter valley adjusting for the fact that it has a 60:40 fixed to variable tariff structure, whereas other valleys have a 40:60 fixed to variable tariff structure.
144 WaterNSW has calculated the relative revenue volatility using the mean absolute deviation calculation used in IPART's 2010 Determination for the volatility allowance.

- Involves WaterNSW entering into a financial swap arrangement with a third party to mimic an 80:20 tariff structure to address its year-to-year revenue volatility issue. For valleys that have a tariff structure of 40:60,[145] the third party would receive two-thirds of actual usage revenue and in exchange provide WaterNSW with two-thirds of expected usage revenue.[146] This means that WaterNSW would receive 80% of its expected user NRR each year.[147]
- Would not be charged to a particular valley if the tariff structure for that valley were to be switched to an 80:20 tariff structure.

Stakeholders' comments in response to our Issues Paper were generally against WaterNSW's proposal to include the costs of an RTP. Most stakeholders preferred WaterNSW to continue the UOM to address revenue volatility risk. Lachlan Valley Water Users Association submitted that it would be willing to move to an 80:20 fixed to variable tariff structure, if WaterNSW's proposed costs of the RTP were to be included in its prices. However, it did note that some members, depending on their usage, did not support moving to an 80:20 fixed to variable price structure.[148]

### 8.3.2 We have included a volatility allowance of $0.765 million per annum

#### Self-insurance is more efficient than an RTP

Through the RTP, WaterNSW is proposing to swap funds with a third-party to mimic an 80:20 fixed to variable tariff structure. We consider that an 80:20 fixed to variable tariff could be a reasonable price structure for WaterNSW as it better reflects its underlying cost structure, while not eliminating all business risk. Therefore, we define the cost of WaterNSW managing its revenue volatility as the costs involved in dealing with the risk of not obtaining at least 80% of its customer share of the NRR.

We consider that it is more efficient for WaterNSW to undertake "self-insurance" and become its own third-party and swap funds with itself (between years), rather than entering into an arrangement with a third-party provider.

We note that at the public hearing in Colleambally, WaterNSW indicated that it wanted to provide the most efficient service to customers possible. However, it did not want to spend time as a management team actively managing debt portfolios and undertaking such work internally.[149]

However, we consider that WaterNSW undertaking "self-insurance" would be an innovative approach that provides an efficient service and value to customers by allowing customers to maintain their existing tariff structures, potentially at lower cost than a third-party provider.

145 All Valleys proposed to be included in the RTP have a 40:60 tariff structure with the exception of the Hunter which has a 60:40 fixed to variable price structure.
146 Typically, under a 'swap' arrangement the net difference is exchanged, not the full amounts.
147 40% is provided from the existing fixed charges, and the remaining 40% is provided from the swap (2/3 x 60% = 40%).
148 Lachlan Valley Water submission to IPART Issues Paper, October 2016, p 12.
149 IPART Public Hearing, 14 November 2016, Colleambally, *Transcript*, pp 41- 42.

Using our draft decision on the WACC, we estimate the cost of "self-insurance" to WaterNSW at $3.062 million in total over the 4-year period, or $0.765 million per year.

We have calculated this amount based on the formula[150] below, by considering the valleys in aggregate. That is, as a *portfolio* of valleys. We then allocated the cost to each valley based on their relative stand-alone costs of volatility.

$$\textit{Volatility Allowance} = \textit{VaR x Opportunity Cost x Duration}$$

- **Value at Risk (VaR)** – This represents the value (or the cashflow) that is at risk to WaterNSW under the current (largely 40:60) fixed to variable price structure compared to an 80:20 split: about 67% (ie, two-thirds) of expected usage revenue for the MDB valleys; and 50% of expected usage revenue for the Hunter valley. WaterNSW should be indifferent between:
  - a 40:60 fixed to variable tariff structure where about 67% (ie, two-thirds) of usage (variable) revenue for the MDB valleys and 50% of expected usage for the Hunter valley is guaranteed, and
  - an 80:20 fixed to variable tariff structure.

  We calculated the total VaR, or the portfolio VaR, by summing the VaR for each individual valley.
- **Opportunity cost** – This is the *nominal* WACC for the MDB valleys (5.9%) and for the Hunter (7.4%).
  - It represents the opportunity cost to WaterNSW of having about 67% of expected usage revenue at risk for the MDB valleys and 50% of expected usage revenue at risk for the Hunter. This is usage revenue at risk under the current (largely 40:60) fixed to variable price structure relative to an 80:20 split.
  - If WaterNSW sets aside reserves for the above cashflows at risk, it would represent a holding cost.

  We calculated the opportunity cost (%) for the portfolio by weighting the nominal WACC for each individual valley using the VaR for each valley as weights – ie, a weighted average nominal WACC.
- **Duration** – This represents the number of years, over the upcoming 4-year determination period, in which actual usage revenue is likely to be less than about 67% (or 50% in the case of Hunter) of expected usage revenue, and hence WaterNSW would need to use either its own funds (initially) or reserves it has built up from years when actual usage is higher than expected. We have used the past 20-years of actual usage data as an indication of future actual usage to calculate the 'duration' for each of the valleys. We consider this to be a reasonable approach given that:
  - WaterNSW has used the past 20-years of actual data for its forecast usage[151], and
  - we have adopted this approach in our draft decision on forecast usage volumes.

150 The formula is used to derive both the total 4-year cost, and the annual cost.
151 Benefits of using historical data are also that it can be easily explained to stakeholders and reflects reality.

$$Duration = \frac{\max[1, occurrence]}{20} x\ Determination\ period$$

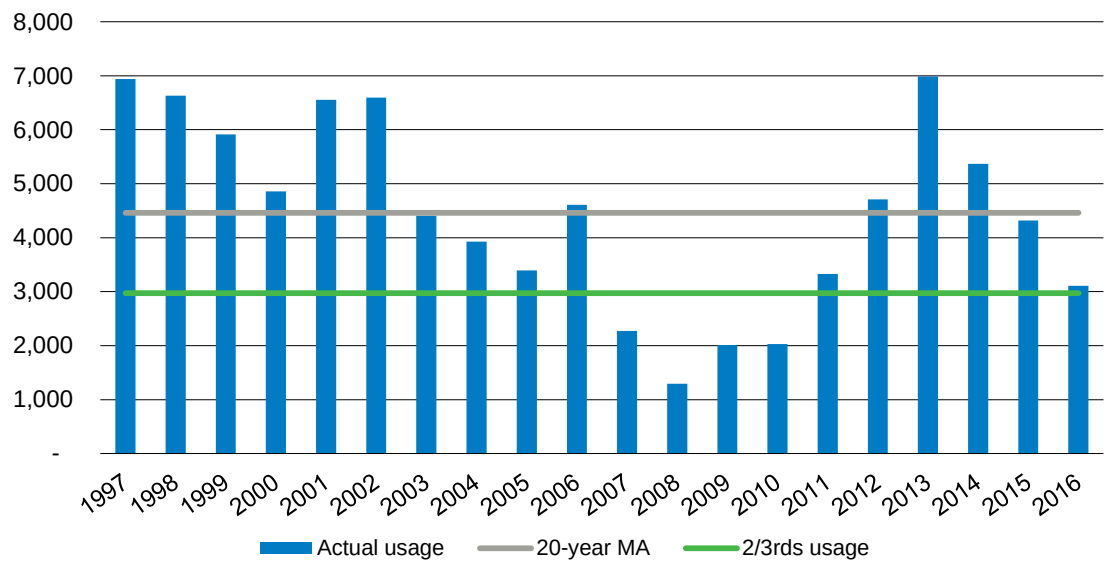
*where:*

- *'occurrence' = number of times actual usage is likely to be less than 67% (or 50% in the case of Hunter) of expected usage, using the past 20-years of actual usage data as forecasts,*[152] *and*
- *'Determination period' = 4 years.*

We summarise our calculation of the total volatility allowance (or the volatility allowance for the portfolio of valleys) in Table 8.5 below. The total volatility allowance over the 4-year determination period would be $3.062 million ($2016-17), or $0.765 million ($2016-17) per year. This compares with WaterNSW's preliminary quote for the RTP of $3.6 million ($2016-17) per year.

We note that our calculations result in a value that is substantially lower than WaterNSW's preliminary quote for its proposed RTP of $3.6 million ($2016-17). However, on an aggregate (or portfolio) basis, using the past 20-years as an indication of future actual usage, revenue volatility could potentially only be an issue in 4 out of 20 years under existing tariff structures. This is shown in Figure 8.1 below.

**Figure 8.1 Total actual usage - 8 MDB valleys & Hunter (GLs per year)**




**Note:** The grey line is the 20-year historical average of actual usage, which is used to forecast water sales and set usage charges (although forecasts and prices are at a valley level). The green line represents two-thirds of usage revenue for the MDB valleys and one-half of usage revenue for the Hunter valley. Therefore, if usage were to be at or higher than the green line, WaterNSW would receive at least two-thirds of usage revenue (in the case of Hunter, at least one-half of usage revenue) and thus would receive at least 80% of its user NRR – this would replicate an 80:20 fixed to variable tariff structure. Using the past 20-years of actual usage as an indication of future usage, WaterNSW could receive less than 80% of its user NRR in 4 out of 20 years - ie in any year, the probability that it does not receive at least 80% of the user NRR for these valleys is 20%.

**Source**: WaterNSW Information Return, June 2016; IPART analysis.

152 We include a minimum occurrence of 1, because for the Hunter valley, using the past 20-years of historical usage, it suggests that WaterNSW may be able to receive at least 80% of its user NRR each year. However, the past 20-years of historical usage is just an estimate, and given that the tariff structure for the Hunter valley is not at 80:20 fixed to variable, there is still some risk.

Table 8.5 below sets out our draft decision on the VaR and annual volatility allowance.

**Table 8.5 Calculation of the total (portfolio) volatility allowance ($000, $2016-17)**

| | VaR | | Opportunity Cost | | Duration | | Volatility allowance |
|---|---|---|---|---|---|---|---|
| Portfolio (4-year total cost) | 64,086 | x | 6.0% | x | 0.8 | = | 3,062 |
| Cost per year | | | | | | | 765 |

**Note**: The weighted average opportunity cost across the portfolio is about 5.972% (IPART analysis).
**Source:** IPART analysis.

We allocated the total volatility allowance amongst the valleys based on their *relative* stand-alone costs of volatility using the same formula, ie, stand-alone volatility cost = 'VaR x opportunity cost x duration' for each valley.[153] We provide the individual valley allocations in Table 8.6 below.

**Table 8.6 Individual valley volatility allowances ($000, $2016-17)**

| Valley | Relative stand-alone volatility cost (%) | Volatility allowance for each valley (total over 4-years) |
|---|---|---|
| Border | 1% | 33 |
| Gwydir | 16% | 490 |
| Namoi | 17% | 507 |
| Peel | 3% | 94 |
| Lachlan | 21% | 637 |
| Macquarie | 13% | 396 |
| Murray | 12% | 393 |
| Murrumbidgee | 16% | 481 |
| Hunter | 1% | 31 |
| Total (4-years) | 100% | 3,062 |
| Per year | | 765 |

**Source:** IPART analysis.

### 8.3.3 Allocating the cost of the Volatility Allowance to entitlements

We have added the cost of the volatility allowance to both HS and GS entitlement charges in each valley based on their relative contribution to revenue volatility, using their actual water allocations over the past 20-years.

In most valleys, HS customers received 100% of their water allocations in the past 20-years and so have not have any volatility allowance applied to their entitlement charges. However, in the Peel, Lachlan, Murray and Murrumbidgee in some years HS customers did not receive 100% of their allocations, and so we have apportioned a part of the volatility allowance to the HS entitlement charges in those valleys.

153 The sum of the individual stand-alone volatility costs is $4.535 million in total or $1.134 million per year, which is larger than the volatility allowance for the portfolio of $3.062 million in total or $0.765 million per year. The difference represents the **diversification benefits** to WaterNSW as a result of holding the valleys as a portfolio rather than as individual stand-alone valleys.

For example, in the Lachlan, over the past 20 years:

- GS customers received 37% of their allocations on average - ie, they contributed (1-0.37) or 63% to revenue volatility, and
- HS customers received 83% of their allocations on average - ie, they contributed (1-0.83) or 17% to revenue volatility.[154]

Therefore, re-weighting the above relative contribution to volatility:

- GS entitlement charges have been apportioned 79% of the volatility allowance for the Lachlan[155], and
- HS entitlement charges have been apportioned the remaining 21%.[156]

We provide the percentage allocation of the volatility costs for each valley in Table 8.7 below.

**Table 8.7 Percentage allocation of the volatility allowance to General Security and High Security entitlement charges (per year)**

| Valley | GS entitlement charges | HS entitlement charges |
|---|---|---|
| Border | 100% | 0% |
| Gwydir | 100% | 0% |
| Namoi | 100% | 0% |
| Peel | 95% | 5% |
| Lachlan | 79% | 21% |
| Macquarie | 100% | 0% |
| Murray | 89% | 11% |
| Murrumbidgee | 93% | 7% |
| Hunter | 100% | 0% |

**Source:** IPART analysis.

### 8.3.4 Introducing valley choice for price structures

WaterNSW's proposal for the inclusion of the RTP also included the option for valleys to opt to have an 80:20 fixed to variable price structure to avoid the costs of an RTP. As mentioned previously, Lachlan Valley Water Users Association submitted that it would be willing to move to an 80:20 fixed to variable price structure to avoid the costs of the RTP at the levels proposed by WaterNSW, however, depending on their usage, some members were opposed.[157]

154 For example, over 2004 to 2010, when usage was quite low in the Lachlan, HS customers received 70% and 30% of their allocations in 2004 and 2005 respectively, when GS customers received no allocations. Also, in 2007 to 2010, HS customers received 10% to 80% in allocations, but GS customers received no allocations. For the Murray, GS allocations were 61% on average over the past 20 years, whereas HS allocations were 95%; For the Murrumbidgee, GS allocations were 62% on average, and HS allocations were 97% on average.

155 79% = 63%/(63% + 17%).

156 21% = 17%/(63% + 17%).

157 Lachlan Valley Water submission to IPART Issues Paper, October 2016, p 12.

We note that some customers may support an 80:20 fixed to variable price structure being applied to their valley to avoid the cost of a volatility allowance. Therefore, we seek stakeholder views on what would be a reasonable basis to apply an 80:20 price structure to a particular valley.

### IPART seeks comment on the following

1 To apply an 80:20 fixed to variable price structure to a valley, would 100% of customers in that valley need to express written support for the change, or would a majority suffice? If a majority would suffice, then would a majority be based on number of customers or the volume of entitlements in that valley? If based on entitlements, should HS entitlements receive greater weight? Or

2 Would it be reasonable to apply an 80:20 fixed to variable price structure if all the members of a Customer Service Committee (CSC) for the valley were in support, or would majority support be sufficient? Under this, we would expect that all customers in the valley would at least need to be informed of the potential change.

3 Are there any other considerations that IPART should be mindful of?

# 9 Sharing of WaterNSW's revenue requirements

WaterNSW provides a range of services to the rural NSW community including water storage and transportation services, flood mitigation services, environmental services, retailing and customer service activities as well as a range of other miscellaneous services.

Since IPART's 2001 Bulk Water Price Determination, WaterNSW (previously State Water Corporation) has operated under a framework that allocates its costs between customers and the broader community based on the impactor pays principle. Under the impactor pays approach, costs are allocated to different individuals or groups in proportion to the contribution that each individual or group makes to creating the costs (or the need to incur the costs).

This chapter provides an overview of our approach to allocating WaterNSW's revenue requirements (costs) between customers and the NSW Government, based on the 'impactor pays' principle.

## 9.1 Sharing of WaterNSW's revenue requirements for the 2017 determination period

WaterNSW proposed to maintain the existing customer shares (Table 9.1) as applied by the ACCC in its 2014 Decision. These cost shares were established in IPART's 2006 Determination and have remained constant since that time.

In 2012, the NSW Government asked IPART to conduct a review into bulk water charges to identify options for determining the NSW Government's cost share for bulk water charges in NSW. IPART recommended the continuation of the existing approach to determining government cost shares, using the cost allocation ratios applied in the 2010 Determination until 1 July 2017. IPART recommended a review of the cost share ratios every second pricing determination.[158] WaterNSW recommended that such a review is best conducted after the conclusion of this determination process as this will provide sufficient resources to be allocated to the process and ensure proper consideration and consultation.[159]

As part of this determination process, we considered it important to review the cost shares used to allocate WaterNSW's revenue requirement between WaterNSW's customers and the NSW Government given:

- The importance of cost shares in determining the charges for extractive users (and the amounts to be recovered from the NSW Government)
- The cost shares have not been revisited for some time, and there is significant stakeholder comment as to the appropriate sharing of WaterNSW's revenue requirements

158 IPART, *Review of Rural Water Charging Systems - Final Report*, August 2012, p 8.
159 WaterNSW pricing proposal to IPART, June 2016, pp 70-71.

- The share of WaterNSW's revenue requirements borne by the NSW Government (either on behalf of past or current impactors) has changed due to changes to WaterNSW's activities.
- The changes in WaterNSW's operating environment mean there may be a number of users of WaterNSW's services (beyond billed customers) that are not currently taken into account in setting the customer shares.[160]

In this context, Frontier Economics was engaged to review the cost shares framework proposed by WaterNSW for the 2017 determination period.[161]

We made a draft decision:

27 To maintain the current customer share ratios as shown in Table 9.1 for the 2017 determination period, consistent with WaterNSW's proposal.

**Table 9.1 IPART's draft decision on customer shares of operating and capital expenditure for the 2017 Determination**

| Cost item or activity | Customer Share |
|---|---|
| **Operating expenditure** | |
| Customer support, Customer Billing, Metering & Compliance, Water delivery and Other Operations, Corrective Maintenance, Routing Maintenance, Asset Management Planning, Insurance | 100% |
| Hydrometric monitoring | 90% |
| Flood Operations, Water Quality Monitoring, Dam Safety Compliance, Environmental Planning & Protection | 50% |
| Dam Safety Compliance Capital Projects pre 1997 | 0% |
| **Capital expenditure** | |
| Asset Management Planning, Routine Maintenance, Structural and Other Enhancement, Corporate Systems, Office Accommodation Capital Projects, Information Management Projects, Water Delivery and Other Operations | 100% |
| Renewal & Replacement | 90% |
| Dam Safety Compliance, Environmental Planning and Protection, Flood Operations | 50% |
| Dam Safety Compliance- Pre 1997 Construction | 0% |

**Source:** WaterNSW pricing proposal to IPART, pp 68-70.

### 9.1.1 Reasons for our draft decision

Stakeholder submissions highlight a significant diversity in views as to the appropriate sharing of WaterNSW's revenue requirements, specifically the proportion of efficient costs that should be recovered from 'billed customers' of these services relative to the NSW Government (on behalf of past users or other current and future 'unbilled' users). Factors influencing this divergence in views are likely to be the:

- different interpretations of the rationale for cost sharing and the appropriate principles to guide its practical applications,[162]

160 See Murray Lower Darling – WaterNSW Customer Service Committee (2016), *Water NSW Regulated Water Charge Review*, Murray Irrigation (2016), *Review of Prices for WaterNSW submission to IPART*, The Macquarie River Food and Fibre, NSWIC (2016), *Water NSW Regulated Water Charge Review*.

161 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016.

- changes to WaterNSW's services and operating environment (reflecting evolving government obligations and community expectations, as well as its corporate structure), and changes in the types of users of WaterNSW's services and the nature of their use, and
- changes to WaterNSW's mix of expenditure in providing these services, which results in changes in the proportion of costs borne by customers (i.e. billed customers such as extractive users) who pay WaterNSW's charges.[163]

### Frontier Economics' recommended framework for cost sharing

At a high level, Frontier Economics supports the impactor pays approach and states that it should be applied in a way which:

- Focuses on the efficient forward-looking costs of undertaking activities to meet the needs of users/impactors, and
- Reflects the existing property rights established in legislation and regulation.[164]

Frontier Economics has recommended a recast of the approach to determining cost shares in each valley between customers and the NSW Government for each of WaterNSW's services.[165] The approach (Figure 9.1) involves:

1. establishing the efficient costs of providing WaterNSW's services,
2. allocating efficient costs to specific services provided by WaterNSW,
3. subtracting legacy costs to determine the efficient forward-looking costs to be recovered from current and future impactors,
4. allocating efficient forward-looking costs between current and future impactors, and
5. recovering costs from customers or the NSW Government through prices and the NSW Government's contribution (or other cost-recovery mechanism).

Frontier Economics considers that the proposed approach is likely to:[166]

- ensure that the cost sharing framework provides the right incentives for extractive water use, flood mitigation and other community activities, and for WaterNSW to invest to provide these services
- encourage greater consistency in the application of the principles for cost sharing over time and with other industries (including the treatment of costs associated with the imposition of Government standards and obligations)

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162 See Toonumbar Water Users Group submission to IPART Issues Paper, October 2016; Lachlan Valley Water submission to IPART Issues Paper, October 2016; The Macquarie River Food and Fibre submission to IPART Issues Paper, October 2016.

163 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 8.

164 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, pp 25-26.

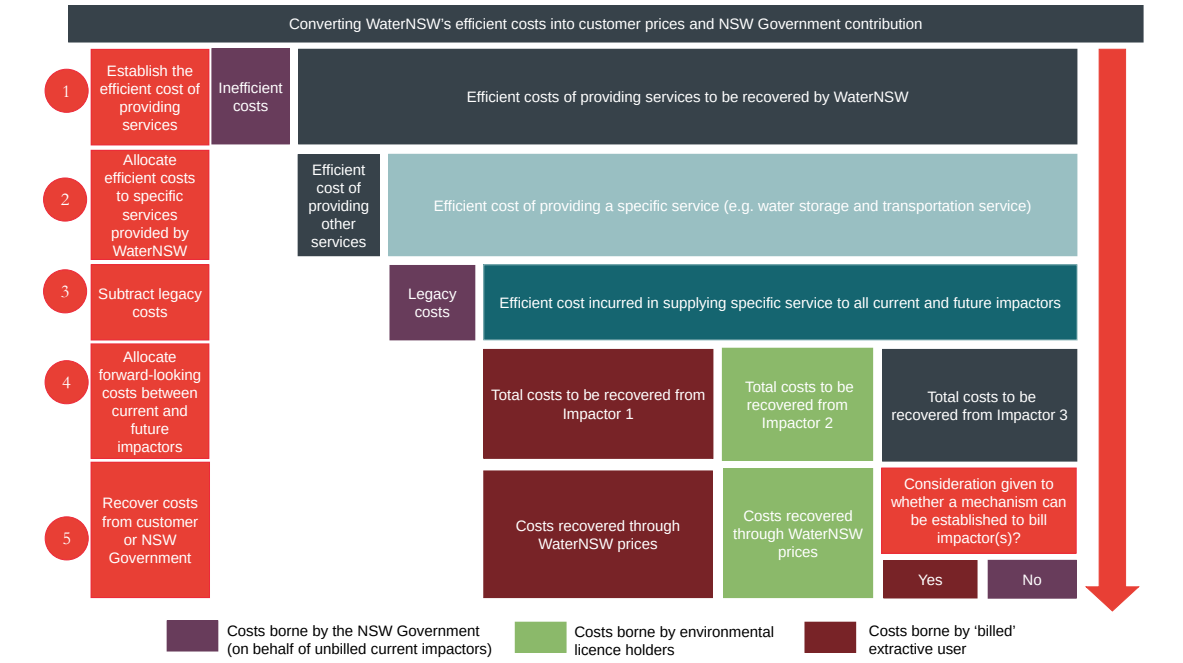
165 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, pp 34-48.

166 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, pp 34-35.

- make the cost of providing specific services - for example, flood mitigation services - more transparent, which should in turn allow for informed decision making regarding the provision of these services relative to alternative measures and the appropriate set of tariff structures to recover the costs of these services[167]
- make the sharing of these costs between customers and the NSW Government more transparent, including the quantum and basis on which the government is providing funding to WaterNSW. This should provide stronger incentives to consider any barriers to the application of charges to those current and future impactors that are not currently billed by WaterNSW, and should ensure that any funding provided by the NSW Government on equity grounds is excluded from the cost sharing framework, and
- support IPART's preferences for the continuation of valley based pricing.

Further detail on Frontier Economics' findings are available in Appendix F and in its report on our website.

**Figure 9.1 Frontier Economics' proposed approach to allocating costs between users and establishing a customer and Government cost sharing framework**




**Source:** Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 36.

In assessing our current approach to cost sharing and WaterNSW's proposal against its proposed framework, Frontier Economics identified a number of activities in the current cost sharing framework that are likely to be inconsistent with its proposed framework including:[168]

167 For instance, investment in other measures to mitigate and/or manage the impacts of flooding, consistent with the Productivity Commission's recommendations regarding cost-benefit analysis and the transparency, and therefore, accountability, it brings to decision making. Productivity Commission, *Natural Disaster Funding Arrangements*, Inquiry Report, December 2014, pp 22-25.

168 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, pp 52-55.

- **Shared or common costs -** where 100% of these costs are allocated to customers, even though there may be other impactors who are not billed (e.g. 'Water delivery and Other Operations')
- **Dam safety compliance costs –** where:
  - 0% of dam safety compliance costs (pre-1997) are current allocated to customers, is likely to be overstating the true legacy costs and understating the forward-looking nature of these cost. That is, any expenditure relating to dam safety compliance (pre-1997) may be required to provide services to current and future users
  - 50% of dam safety compliance costs (post-1997) are currently allocated to customers is likely to be understating the contribution of users to the need for this forward-looking expenditure. However, some of the impactors of the need to incur this expenditure may not be extractive users (i.e. some of the expenditure may be incurred for flood mitigation services).
- **Environmental Planning & Protection –** while 50% of costs are currently allocated to customers (and 50% to the Government, on behalf of the broader community), extractive users (both customers and unbilled users) rather than the broader community can be seen as the primary impactors for these activities.

We agree with Frontier Economics' findings that given the changes in WaterNSW's services and users of these services, there are components of the existing cost sharing framework that may not be consistent with the impactor pays principle. We consider that Frontier Economics' proposed approach may represent a more robust approach in how we share WaterNSW's revenue requirements between customers and the NSW Government.

Frontier Economics also notes that the following pre-conditions are required for the proposed cost-sharing approach:

- a range of detailed information covering:
  - description of WaterNSW's services in order to allocate costs to each of them,
  - a detailed register of dedicated and shared assets and activities, and
  - a clear and well-documented process (including specification of an appropriate causal allocator), for allocating the costs of share assets and/or activities across impactors and services
- potential changes to the current information collection and billing systems
- potential legislative, policy or regulatory changes to enable the allocation of costs to unbilled impactors, and
- broader consultation and stakeholder engagement to ensure that the cost-sharing framework is both a long-term and sustainable approach.[169]

Given these pre-conditions, it is not feasible to implement aspects of the proposed approach in the 2017 determination period. As such, our view is to maintain the current cost share ratios for the 2017 determination period, but implement an extensive review of the cost share framework (with involvement of stakeholders) before the 2021 determination. This will:

169 For more detail regarding the preconditions necessary to implement the proposed approach see: Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, pp 49-51

- offer the best opportunity to address these complex issues and minimise the risk of applying incorrect cost shares that may need to be reversed in subsequent determinations, and
- address a number of the pre-conditions necessary to implement aspects of the proposed approach, including allowing for targeted engagement with stakeholders regarding the proposed approach, consistent with the views submitted by some stakeholders,[170] including WaterNSW.[171]

170 See Murray Lower Darling – WaterNSW Customer Service Committee (2016), *Water NSW Regulated Water Charge Review*, Murray Irrigation (2016), *Review of Prices for WaterNSW submission to IPART*, The Macquarie River Food and Fibre, NSWIC (2016), *Water NSW Regulated Water Charge Review*.

171 WaterNSW pricing proposal to IPART, June 2016, pp 70-71.

# 10 Forecast entitlement and usage volumes

Our draft decision on price structures is to set a two-part tariff, comprising:

- a water extraction charge ($ per ML of water extracted), and
- a fixed entitlement charge ($ per ML of entitlement[172], per year)
  - the exception is in the Fish River Water Supply Scheme (FRWS), where we have set fixed charges based on Minimum Annual Quantities (MAQs) rather than entitlements.

To set these fixed and water take charges for each valley at the levels required to recover the efficient customer share of costs for each valley over the determination period, we need to forecast water usage and entitlement[173] volumes (or MAQs for the FRWS).

For a given level of costs allocated to a valley, the higher the volumes of entitlement/usage for that valley, then the lower the corresponding entitlement/usage price in that valley (and vice-versa). Entitlement volumes are generally stable over time. In contrast, water usage can be volatile and more uncertain. It is important that forecasts are reasonable. If the forecast water usage is not reflective of the actual water usage over the 2017 determination period, then WaterNSW may either over recover or under recover its target revenue (costs).

In this chapter, we outline and explain our forecast entitlements, MAQs and usage volumes, which are used to convert the customer share of WaterNSW's revenue requirement into maximum prices.

As discussed in Chapter 3, under the *WCIR* 2010, WaterNSW must apply for an annual review of its regulated charges in MDB valleys and for some FRWS customers (ie, EnergyAustrlaia and individual minor customers). IPART may vary the regulated charges annually in the MDB valleys, EnergyAustralia and individual minor customers (bulk and raw) in the FRWS if one or both of the following tests are satisfied:

- it is reasonably necessary to vary the charges, having regard to changes in the demand or consumption forecasts submitted by WaterNSW in its annual application (the 'change in forecasts' variation test)
- it is reasonably necessary to vary the charges, having regard to price stability (the 'price stability' variation test).

172 For some licence types entitlements are referred to as 'unit shares'.

173 This is also known as the share component of a licence, which entitles the licence holder to a "share", as measured in megalitres, of water available in a water source. Source: DPI Water, http://www.water.nsw.gov.au/water-licensing/about-licences/new-access-licences, accessed on 26 May 2016.

## 10.1 Licensed water entitlements

Customers across all valleys hold different types of water entitlement (mainly general and high security). These entitlements give customers access to a share of the water resource. The volume of entitlements is influenced by the issuing of access licences, which is governed by the *Water Management Act 2000* (NSW). DPI Water issues these water entitlements on behalf of the Minister for Water.

WaterNSW has provided forecast entitlement numbers sourced from its Water Accounting System. It proposes to carry forward its estimate of water entitlement numbers as of January 2016 for each year of the upcoming determination period.

We made a draft decision:

28 To accept WaterNSW's proposal and set the entitlement volumes for the MDB and Coastal valleys as shown in Table 10.1, subject to annual review for 2018-19 onwards for the MDB valleys.

**Table 10.1 IPART's draft decision on entitlement volumes for the 2017 Determination (ML)**

| | High Security | General Security |
|---|---|---|
| Border | 3,122 | 263,238 |
| Gwydir | 26,840 | 511,609 |
| Namoi | 8,874 | 256,212 |
| Peel | 17,367 | 30,428 |
| Lachlan | 57,514 | 633,256 |
| Macquarie | 42,707 | 632,466 |
| Murray | 261,883 | 2,081,716 |
| Murrumbidgee | 438,331 | 2,267,963 |
| Lowbidgee | N/A | 747,000[a] |
| North Coast | 137 | 9,681 |
| Hunter | 70,408 | 138,109 |
| South Coast | 1,175 | 13,946 |
| **Total** | 928,358 | 7,585,624 |

[a] Lowbidgee consists of supplementary licences only.

**Source**: WaterNSW pricing proposal to IPART, June 2016, p 34.

### 10.1.1 Reasons for our draft decision

We accept WaterNSW's proposed entitlement volumes on the basis that:

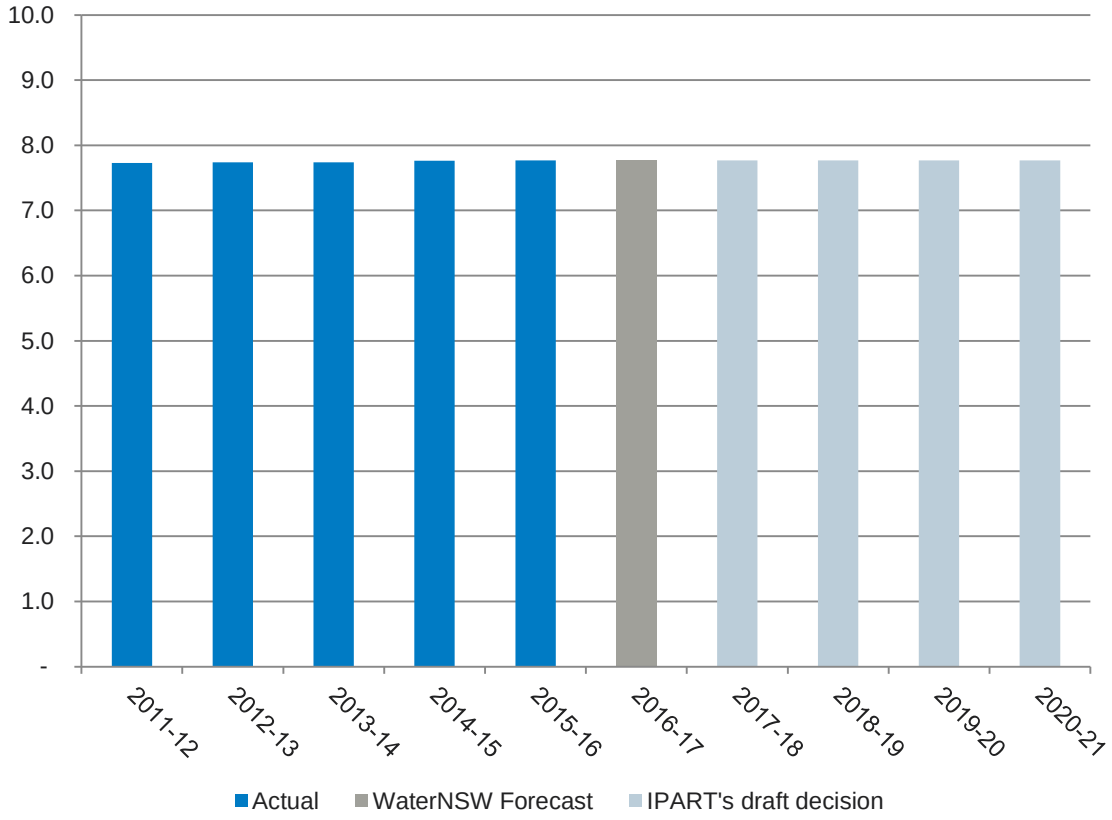
- entitlement volumes have remained relatively stable over time, as shown in Figure 10.1, and
- WaterNSW's proposed entitlement volumes are as of January 2016, which represent the latest and best available information.

The entitlement volumes in Table 10.1 above are broadly consistent with the entitlement volumes for regulated rivers we used in the 2016 determination of the Water Administration

Ministerial Corporation's (WAMC's) water management charges. The aggregate entitlement volume[174] in this determination period is less than 1% lower than the entitlement volume used to set prices in the 2016 WAMC determination.

We received no stakeholder comments on forecast entitlement volumes.

**Figure 10.1 Historical and forecast high security and general security entitlements (millions, ML)**




**Note:** Excludes Lowbidgee valley which only includes supplementary entitlements.

**Source:** IPART, *Review of prices for the Water Administration Ministerial Corporation – Final Report*, June 2016, p 111; WaterNSW Information Return, June 2016.

As discussed above, WaterNSW must apply for annual reviews of its regulated charges in MDB valleys within the 2017 determination period. These annual reviews can allow for prices to change to reflect updates or changes to entitlement volumes in MDB valleys.

Prices for the Coastal valleys, and therefore the entitlement volumes used to set these prices, are not subject to annual reviews and would be fixed for the four years of the 2017 Determination period.

## 10.2 Usage volumes

For the MDB valleys, WaterNSW proposes to retain the current forecasting methodology of a 20-year moving average of actual water usage.[175] That is, data from the period 1996-97 to

174 Excluding entitlements in Lowbidgee valley

2015-16[176] would be used to forecast usage for the first year of the 2017 determination period, 2017-18.[177] For subsequent years, WaterNSW has proposed to update the moving average using a 12-month lag (ie, forecasts for 2018-19 would be based on the period 1997-98 to 2016-17).

To forecast water usage in the Coastal valleys, WaterNSW proposes to maintain a similar approach, but without moving the averaging period. Specifically, for each year of the four year determination period, forecast water usage volumes would be based on:

- a 20-year average of actual water usage for the Hunter valley, data from 1996-97 to 2015-16, and
- due to data availability, a 12-year average of actual water usage for the North Coast and South Coast valleys, using data from 2004-05 to 2015-16.[178]

**Table 10.2 WaterNSW's proposed forecast usage volumes for the 2017 Determination (ML)**

| Valley | WaterNSW's forecast usage volumes |
|---|---|
| Border | 147,829 |
| Gwydir | 264,774 |
| Namoi | 168,133 |
| Peel | 11,291 |
| Lachlan | 205,079 |
| Macquarie | 258,621 |
| Murray | 1,537,145 |
| Murrumbidgee | 1,743,637 |
| North Coast | 619 |
| Hunter | 123,211 |
| South Coast | 3,781 |
| **Total** | 4,464,119 |

**Note:** Forecast usage for the North Coast and South Coast valleys are based on 12 years of data.
**Source:** WaterNSW pricing proposal to IPART, June 2016, p 32.

175 WaterNSW pricing proposal to IPART, June 2016, p 31.
176 Actual data for 2016-17 will not be available in time for our final decision in June 2017.
177 WaterNSW pricing proposal to IPART, June 2016, p 31.
178 WaterNSW pricing proposal to IPART, June 2016, p 31 and WaterNSW Information Return, June 2016.

We made a draft decision:

29 To forecast usage volumes for each year of the 2017 determination period using a simple:

- 20-year moving average of actual, historical usage for MDB valleys (with the exception of Lowbidgee), commencing with using average usage over 1996-97 to 2015-16 to forecast extraction volumes for 2017-18
- moving average of actual, historical usage for Lowbidgee, commencing with using average usage over the year period of 2012-13 to 2015-16 to forecast extraction volumes for 2017-18
- 20-year average of actual, historical usage for Hunter valley, using average usage over 1996-97 to 2015-16
- 12-year average of actual, historical usage for North Coast and South Coast valleys, using average usage over 2004-05 to 2015-16.

The usage volumes for the MDB valleys in Table 10.3 are subject to annual review or update, to maintain a 20-year moving average of actual water usage.

**Table 10.3 IPART's draft decision on forecast usage volumes for the 2017 Determination (ML)**

| Valley | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| Border | 148,312 | 148,312 | 148,312 | 148,312 |
| Gwydir | 262,025 | 262,025 | 262,025 | 262,025 |
| Namoi | 164,800 | 164,800 | 164,800 | 164,800 |
| Peel | 11,491 | 11,491 | 11,491 | 11,491 |
| Lachlan | 205,989 | 205,989 | 205,989 | 205,989 |
| Macquarie | 259,098 | 259,098 | 259,098 | 259,098 |
| Murray | 1,543,782 | 1,543,782 | 1,543,782 | 1,543,782 |
| Murrumbidgee | 1,744,473 | 1,744,473 | 1,744,473 | 1,744,473 |
| Lowbidgee | 57,261 | 57,261 | 57,261 | 57,261 |
| North Coast | 570 | 570 | 570 | 570 |
| Hunter | 123,592 | 123,592 | 123,592 | 123,592 |
| South Coast | 3,792 | 3,792 | 3,792 | 3,792 |
| **Total** | 4,525,185 | 4,525,185 | 4,525,185 | 4,525,185 |

**Note:** For the North Coast and South Coast valleys, forecast usage is based on a 12-year average due to data availability of actual usage. For the Hunter valley and all MDB valleys (except for Lowbidgee), 20-years of actual usage were used to forecast usage. For Lowbidgee, forecast usage was based on a 4-year average due to data availability of actual usage. Subject to annual review for the MDB valleys from 2018-19.

**Source:** WaterNSW Information Return, June 2016; WaterNSW Information Return September 2016; personal communication with WaterNSW 8 December 2016; IPART analysis.

### 10.2.1 Reasons for our draft decision

Stakeholders that addressed this issue generally argued against WaterNSW's proposed 20-year simple moving average approach and favoured the use of a long-run average using data from the Integrated Quantity and Quality Model (IQQM). Specifically:

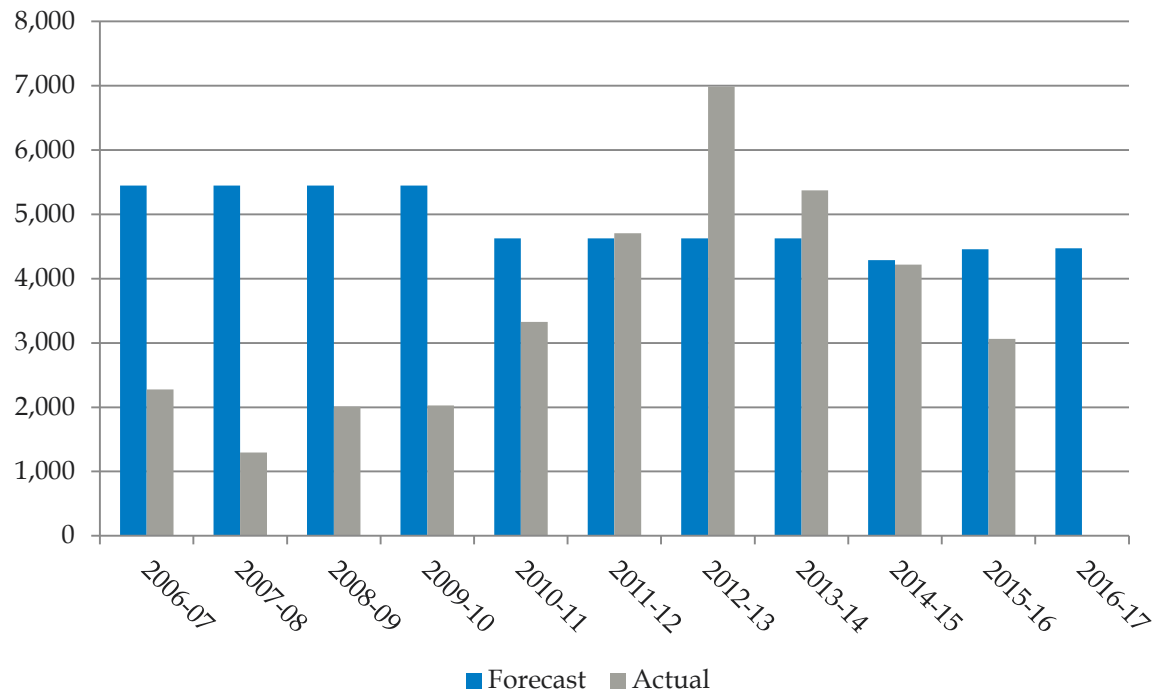
- NSW Irrigators' Council (NSWIC) submitted that the simple moving average approach understates long-term average usage as it includes recent severe droughts, thereby benefiting WaterNSW through higher prices. It adds that the continued use of the 20-year simple moving approach invariably leads to greater price fluctuations between determination periods, as four years of historical data are dropped off, and the most recent four years added.[179]
- Gwydir Valley Irrigators' Association (GVIA) stated that the 20-year simple moving average would lead to higher usage prices and over-recovery in revenue by WaterNSW.[180]

However, for the purpose of the price determination, we consider the 20-year simple moving average superior to the long-run average using IQQM data on the basis that:

- The 20-year simple moving average provides a reasonable balance between price stability and better reflecting current climatic and rainfall conditions.
- The IQQM was not developed for the purposes of forecasting usage over a 4 year period, but for the purposes of assessing the impacts of various water management strategies.[181]
- The IQQM was adopted in IPART's 2006 Determination, but forecasts using IQQM modelling were well above actual extraction levels over the determination period. Total actual usage was only 35% of forecast total usage over the 2006 determination period. In contrast, in IPART's 2010 Determination, where we adopted a 20-year moving average approach, total actual usage was 110% of forecast total usage. In the current ACCC 2014 Decision, actual usage is 88% of forecast usage for the years 2014-15 and 2015-16.

179 NSW Irrigators' Council submission, October 2016.
180 GVIA submission, October 2016, p 15.
181 DPI Water, http://www.water.nsw.gov.au/water-management/modelling, accessed on 23 February 2017.

**Figure 10.2 Forecast versus actual usage over the 2006 Determination, 2010 Determination and 2014 Decision (GL)**




**Note:** Forecast and actual usage for the 2006 Determination and 2010 Determination are for MDB and Coastal valleys. Forecast and actual usage for the 2014 Decision are for the MDB valleys only (excluding Lowbidgee valley).

**Source:** IPART, *Review of bulk water charges for State Corporation: From 1 July 2010 to 30 June 2014 – Final Report*, June 2010, p 119–125; ACCC annual price control model 2016-17; WaterNSW Information Return, June 2016; personal communication with WaterNSW October – December 2016.

We note that our forecast usage volumes are slightly different to WaterNSW's proposal. This is because our forecast usage includes:

- 2015-16 actual usage rather than forecast usage, and
- 2013-14 and 2014-15 Belubula usage data for the Lachlan valley, which WaterNSW had excluded from its submission. This has resulted in higher forecast usage volumes compared to WaterNSW's proposal.

We have forecast usage volumes for Lowbidgee valley as part of our draft decision to restructure the Lowbidgee valley price structure to 80:20 fixed to variable. See Chapter 11 for more detail.

For the MDB valleys, excluding the Lowbidgee valley, the period of data used to forecast usage volumes is from 1996-97 to 2015-16 for 2017-18 (to be reviewed/updated from 2018-19 onwards). For the Lowbidgee valley, the period of data is from 2012-13 onwards due data availability issues, with an extra year of actual usage data to be added to the averaging period during each year of the 2017 determination.

For the Coastal valleys, the period of data used to forecast usage volumes is from:

- 1996-97 to 2015-16 for Hunter valley, and
- 2004-05 to 2015-16 for the North Coast and South Coast valleys, due to data availability.

Annual reviews in MDB valleys will allow for prices in MDB valleys to change to reflect updates or changes to usage volumes. Specifically, prices would be updated to reflect the 20-year moving average. That is, for the MDB valleys (with the exception of Lowbidgee):

- for 2017-18, the first year of the 2017 determination period, usage volume forecasts will be based on the average of actual usage over the 20-year period of 1996-97 to 2015-16
- for 2018-19, usage forecasts will be based on the average of actual usage over the 20-year period 1997-98 to 2016-17, and
- for 2019-20 and 2020-21 the 20-year averaging periods will be 1998-99 to 2017-18 and 1999-2000 to 2018-19, respectively.

For the Lowbidgee valley, annual reviews of forecast extraction volumes over the 2017 determination period will include each extra year of available data on actual extraction volumes (eg, for the 2018-19 annual review, forecast extractions will be based data from 2012-13 to 2016-17).

Forecast extraction volumes for the Coastal valleys (North Coast, Hunter and South Coast) will be fixed for the four years of the 2017 Determination.

## 10.3 Fish River Water Supply Scheme (FRWS)

The FRWS delivers raw bulk water to three major customers and 83 individual customers. Major customers are:

- Energy Australia
  - Wallerawang power station (now closed), and
  - Mt Piper power station
- Oberon Council
- WaterNSW for its Greater Sydney bulk water supply services.

The FRWS also delivers treated (filtered) water to Lithgow City Council and 216 individual customers.

### 10.3.1 Minimum Annual Quantities

Access to water in the FRWS is regulated through a 'Minimum Annual Quantity' (MAQ) for each major customer, and (collectively) for minor customers, as users in the scheme do not hold statutory water access entitlements.

Access (fixed) charges are set with reference to each major customer's actual MAQ. For each minor customer, these charges are set with reference to a deemed MAQ of 200kL.

WaterNSW proposed MAQs for the FRWS are shown in Table 10.4.

**Table 10.4 WaterNSW's proposed minimum annual quantities for FRWS for the 2017 Determination (ML)**

| Customer | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| **Raw Water** | | | | |
| EnergyAustralia | 8,184 | 8,184 | 8,184 | 8,184 |
| WaterNSW – GS | 3,650 | 3,650 | 3,650 | 3,650 |
| Oberon Council | 1,064 | 1,064 | 1,064 | 1,064 |
| Individual customers (kL) | 200 | 200 | 200 | 200 |
| **Filtered Water** | | | | |
| Lithgow Council | 1,778 | 1,778 | 1,778 | 1,778 |
| Individual customers (kL) | 200 | 200 | 200 | 200 |

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 34.

We made a draft decision:

30 To set the minimum annual quantities (MAQs) as shown in Table 10.5 for the FRWS.

**Table 10.5 IPART's draft decision on minimum annual quantities for FRWS for the 2017 Determination (ML)**

| Customer | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| **Raw Water** | | | | |
| EnergyAustralia | 8,184 | 8,184 | 8,184 | 8,184 |
| WaterNSW – GS | 3,650 | 3,650 | 3,650 | 3,650 |
| Oberon Council | 1,064 | 1,064 | 1,064 | 1,064 |
| Individual customers (kL) | 200 | 200 | 200 | 200 |
| **Filtered Water** | | | | |
| Lithgow Council | 1,778 | 1,778 | 1,778 | 1,778 |
| Individual customers (kL) | 200 | 200 | 200 | 200 |

**Note:** Subject to annual review for EnergyAustralia and individual minor customers from 2018-19 onwards.
**Source:** WaterNSW pricing proposal to IPART, June 2016, p 34.

### Reasons for our draft decision

MAQs are specified in the water sharing arrangements for the FRWS. The share of the water resource assigned to specific customers is specified in WaterNSW's Water Management Licence for the Fish River Scheme.[182] The MAQ is the Supply Availability in Number of Shares under no restrictions in Schedule 3 of this licence. The MAQs are analogous to entitlements in other valleys.

182 This water management licence for WaterNSW is issued under Part 9 of the *Water Act (1912).*

In 2014-15, EnergyAustralia closed and decommissioned the Wallerawang power station.[183] Although the closure of Wallerawang will influence EnergyAustralia's forecast water usage, it will not change the forecast MAQs over the 2017 determination period. From our understanding, EnergyAustralia will retain its MAQs. Therefore, MAQs are forecast to be the same as the 2014-17 period.

Similar to the MDB valleys, annual reviews of prices for EnergyAustralia and individual minor customers (both raw and filtered) can allow for prices to change to reflect updates or changes in the number of individual customers and MAQs.

Prices for WaterNSW – GS, Oberon Council and Lithgow Council, and therefore the MAQs used to set these prices, would be fixed for the four years of the 2017 Determination.

### 10.3.2 Usage volumes

Similar to the MDB and Coastal valleys, WaterNSW has proposed to use data on 20-years of actual, historical water use to forecast water use of all FRWS customers over the 2017 determination period, except EnergyAustralia. WaterNSW's proposed forecast usage for the 2017 determination period is shown in Table 10.6 below.

Water usage in the FRWS has reduced significantly as a result of the closure of EnergyAustralia's Wallerawang power station. Total annual water use by EnergyAustralia dropped by around 5, 000 ML (about 55% of total FRWS usage in 2013-14) due to the closure of Wallerawang. WaterNSW does not expect a significant increase in usage by other customers to take up the excess capacity. WaterNSW stated that, following the closure of Wallerawang power station in 2014-15, the drop in usage led to a fall in revenue of around $1.8 million per year.[184]

As such, WaterNSW has submitted that it would not be appropriate to use average annual usage volumes over the preceding 20 years to forecast Energy Australia's annual usage volumes over the 2017 determination period. Instead, WaterNSW proposes to forecast usages for EnergyAustralia based on 2014-15 usage from EnergyAustralia's remaining Mt Piper power station (ie, 1,200 ML per annum).

183 WaterNSW pricing proposal to IPART, June 2016, p 41.
184 WaterNSW pricing proposal to IPART, June 2016, p 41.

WaterNSW's proposed forecast usage volumes for FRWS are shown in Table 10.6.

**Table 10.6 WaterNSW's proposed forecast usage volumes for the FRWS for the 2017 Determination (ML)**

| Customer | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| **Raw Water** | | | | |
| EnergyAustralia | 1,200 | 1,200 | 1,200 | 1,200 |
| WaterNSW – GS | 2,299 | 2,299 | 2,299 | 2,299 |
| Oberon Council | 710 | 710 | 710 | 710 |
| Individual minor customers | 51 | 51 | 51 | 51 |
| **Filtered Water** | | | | |
| Lithgow Council | 868 | 868 | 868 | 868 |
| Individual minor customers | 117 | 117 | 117 | 117 |
| **Total** | 5,244 | 5,244 | 5,244 | 5,244 |

**Source:** WaterNSW Information Return, June 2016.

We made a draft decision:

31 To forecast usage volumes using a simple:

- 20-year moving average of actual, historical usage for all customers in the FRWS, except EnergyAustralia, as shown in Table 10.7
- moving average of actual, historical usage for Mt Piper power station for EnergyAustralia, from 2012-13 to 2015-16 to forecast usage volumes for 2017-18.

The volumes for some customers in the FRWS in Table 10.7 are subject to annual review or update, to maintain a 20-year moving average of actual water usage.

**Table 10.7 IPART's draft decision on forecast usage volumes for the FRWS for the 2017 Determination (ML)**

| Customer | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| **Raw Water** | | | | |
| EnergyAustralia | 1,514 | 1,514 | 1,514 | 1,514 |
| WaterNSW – GS | 2,298 | 2,298 | 2,298 | 2,298 |
| Oberon Council | 709 | 709 | 709 | 709 |
| Individual minor customers | 50 | 50 | 50 | 50 |
| **Filtered Water** | | | | |
| Lithgow Council | 866 | 866 | 866 | 866 |
| Individual minor customers | 116 | 116 | 116 | 116 |
| **Total** | 5,553 | 5,553 | 5,553 | 5,553 |

**Notes:** We used actual usage in 2015-16, whereas WaterNSW used forecast usage in 2015-16. Subject to annual review for EnergyAustralia and individual minor customers from 2018-19 onwards.

**Source:** WaterNSW Information Return, June 2016; WaterNSW Information Return, September 2016.

### Reasons for our draft decision

In WaterNSW's other valleys, we decided to use the 20-year moving average of historical usage to forecast annual usage volumes over the 2017 Determination period. For the FRWS, WaterNSW's forecasts for all customers **other** than EnergyAustralia are based on the 20-year moving average approach. This approach was used in the 2014 ACCC Decision for Fish River.

For this determination, we have adjusted our forecasts for EnergyAustralia to take the closure of Wallerawang power station into account. We consider WaterNSW's proposal to forecast usage based on one year of EnergyAustralia's usage data to be inappropriate as it does not capture trends in EnergyAustralia's usage behaviour. Moreover, WaterNSW's proposal does not account for actual usage from EnergyAustralia in 2015-16. As discussed above, we consider a 20-year moving approach to be the most appropriate method to forecast usage for EnergyAustralia. However, due to data availability, we only have four years of actual usage data (2012-13 to 2015-16) and forecast usage data for 2016-17 for the Mt Piper power station.[185,186] As this is the latest and best available information, we have adopted a moving average of historical usage for Mt Piper power station to forecast water usage for EnergyAustralia.

For customers in the FRWS, the period of data used to forecast usage volumes is from:

- 1996-97 to 2015-16 for all major and minor customers, except EnergyAustralia, and
- 2012-13 onwards for EnergyAustralia's Mt Piper power station due to data availability issues, with an extra year of actual usage data from EnergyAustralia to be added to the averaging period during each year of the 2017 Determination.

Similar to MDB valleys (excluding Lowbidgee), annual reviews can allow for prices for individual minor customers (bulk raw water and filtered raw water) in the FRWS to be updated to reflect the 20-year moving average.

Similar to the Lowbidgee valley, annual reviews can allow for prices for EnergyAustralia to be updated to include each extra year of available data on actual usage volumes (eg, for the 2018-19 annual review, forecast usage will be based on actual usage data from 2012-13 to 2016-17).

Forecast usage volumes for WaterNSW – GS, Oberon Council and Lithgow Council will be fixed for the four years of the 2017 Determination.

185 2016-17 usage is forecast usage based on 5 months of actual usage and pro-rated.
186 Personal communication with WaterNSW, 13 December 2016

# 11 Tariff structures

WaterNSW currently levies a two-part tariff for each valley, comprised of:

- a **Fixed charge** for each valley – an annual fixed charge that applies to the share component specified on each water access licence ($ per ML of general security (GS) and high security (HS) water entitlement or unit share), and
- a **Usage charge** for each valley – that applies to the quantity of water recorded as taken for a water access licence in the billing period ($ per ML of water take or 'usage').

This chapter discusses our decision in determining price structures for WaterNSW. This includes:

- the balance between fixed and usage charges (ie, tariff structures),
- the balance between HS and GS entitlement charges (ie, HS premium), and
- the balance between HS and GS entitlement charges for MDBA and BRC charges.

It also includes the structures of WaterNSW's prices for the Fish River Water Supply Scheme (FRWS).

## 11.1 Fixed versus variable charges

WaterNSW has proposed to broadly maintain the existing price structures. This includes:

- valley-based pricing,
- two-part tariff (ie, a fixed and usage charge),
- prices being set to achieve a fixed to variable revenue split of 40:60 for most valleys, and
- revenue being allocated to high security and general security customers using a high security premium. The HS premium is discussed below in section 11.2.

WaterNSW proposed to maintain the predominantly 40:60 fixed to variable price structure due to strong stakeholder support. However, it notes that its current proportion of fixed charges (mostly 40%) exposes it to considerable revenue volatility as a result of variability in water availability and hence sales. It submitted that this revenue volatility, combined with the difference between its cost structure (which is largely fixed) and its 40:60 fixed to variable price structure, exposes it to sales volume-related risk.[187] Our decision in addressing WaterNSW's revenue volatility was discussed in Chapter 8.

187 WaterNSW pricing proposal to IPART, June 2016, p 25.

We made a draft decision:

32 To set the fixed to variable price structures for each valley as set out in Table 11.1.

**Table 11.1 IPART's draft decision on price structures for the 2017 Determination**

| Valley | Price structure (fixed to variable) |
|---|---|
| **Murray-Darling Basin Valleys** | |
| Border | 40:60 |
| Gwydir | 40:60 |
| Namoi | 40:60 |
| Peel | 40:60 |
| Lachlan | 40:60 |
| Macquarie | 40:60 |
| Murray | 40:60 |
| Murrumbidgee | 40:60 |
| Lowbidgee | Restructure to 80:20 |
| Fish River[a] | 80:20 |
| **Coastal Valleys** | |
| North Coast | 60:40 |
| Hunter | 60:40 |
| South Coast | 40:60 |

[c] We discuss the Fish River Water Supply further in Chapter 12.

### 11.1.1 Reasons for our draft decision

**Maintain the existing fixed to variable price structure for the MDB valleys (excluding Lowbidgee), and the Coastal valleys.**

WaterNSW submitted that it is largely a fixed cost business – it manages and operates major infrastructure to deliver bulk water to licensed water users. WaterNSW has no role in setting water allocations to entitlement holders. WaterNSW submitted that, based on its preliminary analysis, a cost-reflective tariff structure would be close to 100% fixed.

We consider that, ideally, fixed costs should be recovered through fixed charges, and variable costs should be recovered through variable charges, as this can promote the economically efficient use of water infrastructure assets.[188] Given that WaterNSW's costs are largely fixed, we do not consider its current tariff structure to recover the customer share of costs, which is mostly 40:60 fixed to variable, to be cost-reflective. A higher fixed proportion would be appropriate.

However, we acknowledge that WaterNSW's customers expressed a preference for broadly maintaining the existing price structures (in addition to maintaining the UOM for WaterNSW to manage its revenue volatility, rather than the inclusion of a risk transfer product as discussed in Chapter 8). For example, NSW Irrigators' Council (NSWIC)

188 This principle is stated in the *Water Charge (Infrastructure) Rules 2010* (WCIR) section 3.11.

submitted that the current price structures provided a degree of security for customers against low or no water availability.[189]

> Finally, NSWIC has justified its position for the 40:60 fixed to variable ratio (in Inland valleys) on the basis that it has provided a degree of protection for WaterNSW's customers against supply side risk (i.e. of low or no water availability). NSWIC has provided evidence that in cases of low water availability and high fixed to variable tariff ratio for WaterNSW's regulated water charges, the cost impost on WaterNSW's customers can be significant in some valleys. In the absence of a comprehensive 'fixed charges relief trigger' policy offered by the NSW Government under its hardship provisions, NSWIC considers the current tariff structure equitable and adequate.

Murray Irrigation shares a similar view, submitting that a 40:60 fixed to variable price structure is appropriate, given the relationship between water availability and customers' cash flows.[190]

> WNSW's decision to maintain the current tariff structure so that 40 percent of its revenue is recovered through entitlement charges (fixed) and 60 percent is recovered through usage charges (variable) is welcome and consistent with the feedback from the Murray Lower Darling Customer Service Committee.
>
> This decision recognises the reality of the relationship between water availability and cash flow for farm businesses.

In making our decision, we considered that a higher fixed to variable price structure would be more appropriate for WaterNSW given its costs are largely fixed. However, we note that WaterNSW proposed to maintain its existing tariff structures, based on customer preferences, but sought the inclusion of a risk transfer product to replicate an 80:20 fixed to variable tariff structure for the valleys that are at cost recovery and were proposed to have a fixed to variable price structure of less than 80% - ie, the 8 MDB valleys (excluding Fish River and Lowbidgee valley) and the Hunter valley. We note that it also proposed the continuation of the UOM.[191]

Given stakeholders' preferences, we have decided to maintain the existing tariff structures, with the exception of Lowbidgee valley and Fish River, and provide WaterNSW with an efficient volatility allowance to deal with the risk of not having an 80:20 fixed to variable tariff structure (rather than including its proposed preliminary costs of a risk transfer product). Our efficient allowance to address this revenue volatility was discussed in Chapter 8.

We discuss our draft decision on Lowbidgee valley in the section below, and for the Fish River Water Supply Scheme in Chapter 12.

### Restructure the Lowbidgee valley usage charge to an 80:20 fixed to variable price structure

The current price structure for Lowbidgee licences is a 100% fixed entitlement charge as per the ACCC's 2014 Decision. As Lowbidgee customers only receive supplementary water from the Murrumbidgee valley, the availability of water is more variable than for upstream

189 NSWIC submission to IPART Issues Paper, October 2016, p 36.
190 Murray Irrigation submission to IPART Issues Paper, October 2016, p 4.
191 WaterNSW pricing proposal to IPART, June 2016, p 7.

users. The current 100% fixed pricing structure reflects entitlement alone and does not reflect variability of water access experienced by Lowbidgee customers.

Some Lowbidgee customers submitted that while bulk water charges should include a variable component based upon water usage by licence holders, this may be problematic due to concerns about the accuracy of metering of some licence holders' offtake from the river. Australian Modern Dairy (AMD) submitted that it would support an 80:20 fixed to variable tariff structure as long as there is effective consultation with other Redbank North customers and the metering issues are resolved.[192]

We consider an 80:20 fixed to variable tariff structure for WaterNSW achieves a reasonable balance between matching WaterNSW's largely fixed cost structure and distributing volume risk between WaterNSW and its customers (ie, it recognises there is variability in water access by Lowbidgee valley customers). This is reflected in WaterNSW's proposal for the inclusion of the costs of a risk transfer product to effectively replicate this price structure for WaterNSW in other valleys. Further, the introduction of a variable component to the pricing structure would provide an incentive for WaterNSW to investigate and address the metering issues identified by Lowbidgee licence holders. Therefore, our draft decision is to restructure the price structure for Lowbidgee valley from 100% fixed to 80:20 fixed to variable.

We note that the 80:20 fixed to variable price structure for Lowbidgee valley would not require a volatility allowance, which we have included in the prices of other MDB valleys where the fixed to variable ratio is less than 80:20 fixed to variable.

## 11.2 High security premium

A HS entitlement charge is levied on HS entitlement holders for each valley and incorporates a HS premium to reflect the greater security (ie, priority in water allocations) and reliability of water supply enjoyed by HS entitlement holders relative to GS entitlement holders. This charge is applied regardless of whether or not a HS entitlement holder receives or uses the full allocation amount of their entitlement in any given year.

192 Personal communication with Australian Modern Dairy, 29 November 2016.

**Box 11.1 The difference between HS and GS entitlements**

A water access entitlement provides the holders the right to a specific share of the water available within a specified water source. There are two types of entitlements relevant to this pricing determination:

- **HS entitlements** provide holders with their full allocation (except in severe drought periods). Holders of this entitlement are generally given priority before general security entitlement holders,[193] and
- **GS entitlements** provide holders with an allocation of water subject to storage and demand circumstances, generally after HS entitlement holders have received their allocations.

HS premiums are calculated for **each valley** and are used to set the relative difference in HS and GS entitlement charges (per ML). In terms of modelling, once the customer share of notional revenue requirement (NRR) for each valley is established, an appropriate price structure (eg, 40% fixed and 60% variable for most valleys) is selected. Then the HS premiums are used to allocate the fixed component of the user NRR between the HS and GS entitlement charges.[194] Therefore, changes in the HS premium do not represent changes in revenue for WaterNSW, but rather a redistribution of revenue raised between HS and GS entitlement charges within a valley.

The current and WaterNSW's proposed approach is calculated as follows:

(1) HS Entitlement Charge = GS Entitlement Charge x HS Premium.

Where:

(2) HS Premium = Conversion Factor x Reliability Ratio.

Conversion factors are interpreted as the units of GS entitlements required to convert into one unit of HS entitlement. As discussed below, conversion factors account for the fact that HS entitlements are given priority in water allocations before GS entitlements.[195]

**Conversion factors** were first established in the 2006 Determination by IPART based on the then State Water's submission. The intention of this factor was to reflect the relative security of supply between HS and GS entitlements. These conversion factors were based on data from each valley's respective Water Sharing Plan (WSP), and from secondary sources if no WSP was in place. For the majority of valleys, the following formula was used to calculate the conversion factor.

193 In all valleys, except the Murray River, allocations to GS entitlement holders occur after HS entitlement holders receive 100% of their entitlements. In the Murray River (excluding the Lower Darling) allocations to GS entitlement holders occur after HS entitlement holders receive 97% of their entitlements. In the Lower Darling, HS entitlement holders receive 100% of their allocations before GS entitlement holders.

194 For example, if the HS premium for a particular valley (with a 40:60 tariff structure) is 4, then HS entitlement charges would be four times that of GS entitlement charges. Therefore, if there were, say, 2,000ML of HS entitlements and 10,000ML GS entitlements then, the per ML GS entitlement charge would = (40% x user NRR)/(2,000 x 4 + 10,000). The HS entitlement charge per ML would then be four times that of the GS entitlement charge per ML.

195 With the exception of Murray, Murrumbidgee, Hunter and South Coast valleys, GS entitlement holders only receive water allocations after HS entitlements holders receive 100% of the unit shares.

(3) Conversion Factor = GS unit shares/(Long Term Average Annual Extraction Limit – HS unit shares)

For all valleys, a minimum conversion factor of 1.25 was applied.

The **reliability ratio** was introduced as an additional factor in the HS premium in IPART's 2010 Determination. The reliability ratio is calculated as follows:

(4) Reliability Ratio = 20-year average actual allocations to HS entitlement holders/20-year average actual allocations to GS entitlement holders.[196]

This ratio represents the reliability of water HS entitlements receive relative to GS entitlements. The 20-year period is consistent with the period used for forecasting usage.

**Box 11.2 Why the reliability ratio was introduced**

The reliability ratio was first introduced in the then State Water's submission to the 2010 Determination. State Water argued that the existing conversion factors underestimated the benefit of HS entitlements over GS entitlements, especially in periods of low rainfall.

> "In dry times however, the value of HS holders 'gain' is the security of their water supply which is, on average, close to a full allocation. Since this water has greater value in times of scarcity, as demonstrated by the spot price for water, the value of the gain by HS holders is greater than the value of the loss incurred during wet years. …The massive demand for conversions and the subsequent embargo by the then DWE [Department of Water and Energy] (now Office of Water), is evidence that the 'price' of converting, that is, the conversion factors, are too low and need to rise in order to restore equilibrium."[197]

To rebalance this inequity and better equate the costs and benefits of HS and GS entitlements, IPART, in consultation with State Water, introduced the reliability ratio in its 2010 Determination. The reliability ratio accounts for the scarcity effect – individuals generally value goods inversely to its availability.

Although reliability ratios address the extra reliability of HS entitlements, using reliability ratios alone fails to account for water allocation priorities, ie, the extra security of HS entitlements. For example, using a reliability ratio of 2 as the HS premium would reflect that HS entitlement holders receive, on average, two times the amount of allocations as GS entitlement holders per ML, and hence would pay two times the per ML charge applied to GS entitlement charges. On face value, this may make customers indifferent from being a HS entitlement holder versus a GS entitlement holder, as their entitlements have been priced equivalently.

However, customers would not be indifferent, because the HS entitlement charges would only be reflecting the fact that the HS entitlements receive twice the amount of allocations on average per ML, and not for the fact that they have priority (or security) in water allocations each year.[198] Therefore, the reliability ratio alone fails to account for the priority (or security) in water allocations that HS entitlement holders enjoy over GS entitlement holders.

As such, as part of the 2010 Determination, the HS premium was based on both the conversion factors and reliability ratio.

196 Allocations are a proportion of water allocation compared to their entitlements.
197 State Water Corporation, Submission to IPART 2010 Pricing Determination, 16 September 2009, p 10-5.
198 For the majority of valleys, GS entitlement holders only receive allocations after HS entitlement holders receive 100% of their allocations.

We made draft decisions:

33 To:

- maintain the existing approach to calculating the high security premium, and
- update the security and reliability factors[199] as shown in Table 11.5

**Table 11.2 IPART's draft decision on HS premiums for the 2017 Determination**

| Valley | High security premium |
|---|---|
| Border | 2.69 |
| Gwydir | 3.19 |
| Namoi | 2.15 |
| Peel | 10.35 |
| Macquarie | 4.75 |
| Lachlan | 5.63 |
| Murrumbidgee | 2.65 |
| Murray | 2.45 |
| North Coast | 1.29 |
| Hunter | 1.29 |
| South Coast | 1.94 |

**Source:** WaterNSW Information Return, June 2016; IPART analysis.

### 11.2.1 Reasons for our draft decision

#### HS premium

We consider the existing approach is appropriate on the basis that the combination of the two factors is aimed at addressing both the **security** and **reliability** of water supply from holding HS over GS entitlements. Specifically:

- the conversion factor is a *proxy* for the security in HS entitlements that stems from the differential allocation priority, and
- the reliability ratio accounts for the reliability in HS entitlements, especially in periods of low rainfall.

As part of our decision, we have made adjustments to the conversion factors and reliability ratio. Specifically:

- We have updated the conversion factors using data from current WSPs. Existing (and proposed by WaterNSW) conversion factors have not been updated since they were first established in 2006. We consider updating the conversion factors appropriate given that:
  - WSPs have been developed and/or updated since 2006, and
  - existing conversion factors were calculated using different approaches and sources, which means that HS entitlement holders are being treated

199 We have changed the terminology from 'conversion factor' to 'security factor' in the calculations underlying the high security premiums. This is to avoid confusion as certain valleys do not allow for conversion between GS and HS entitlements.

inconsistently across valleys (eg, Hunter valley – we provide further discussion below).

Updating the conversion factors will ensure that the best available information is used and that all valleys are treated consistently.

- We have updated reliability ratios, using the latest 20-year data (ie, 1996-97 to 2015-16).[200,201]

Stakeholder submissions were largely supportive of the current approach for setting the HS premium for WaterNSW's bulk water entitlement charges. We acknowledge that the Gwydir Valley Irrigators Association (GVIA) raised concerns about the reliability ratio, specifically it argued that the reliability ratio should be based on IQQM outputs on usage rather than a 20-year average and whether updates in the volume of HS and GS entitlements in the Gwydir valley have been incorporated into the HS premium.[202,203] Our update to the conversion factor and reliability ratio addresses the change in HS and GS entitlements.

Our draft decision for the HS premium would largely affect the customers in the Hunter valley. At the 2006 Determination, the conversion factor of 3 for the Hunter valley was directly sourced from its WSP, however, now the WSP no longer specifies such a conversion factor.[204, 205] Therefore, we have calculated an appropriate factor for the Hunter valley, to reflect the (average) relative security of water, consistent with the approach adopted for the other valleys using available information in its WSP.

In updating the HS premiums we have also renamed the 'conversion factor' used in our calculations of the HS premium to **'security factor'**. This is to avoid confusion with terminology in WSPs, where conversions between licences are prohibited.

Table 11.3, Table 11.4 and Table 11.5 demonstrate how IPART's draft HS premiums have been determined. Table 11.5 also compares IPART's HS premiums to WaterNSW's proposed HS premiums.

200 With the exception of the North Coast valley where only 13-years of HS allocation and 14-years of GS allocation data are available.

201 We considered reducing the averaging period of the reliability ratio to a shorter time frame (for example, 4 years in line with the determination length). However, a shorter averaging period would introduce price volatility for all customers. We consider the 20-year average to be more appropriate and in line with our forecasts for water usage.

202 Gwydir Valley Irrigators Association Inc. submission, October 2016, p 18.

203 GVIA also suggested that IQQM outputs should be adopted rather than the 20-year moving average for the reliability ratio. However, we consider this inappropriate as the reliability ratio is based on allocation whereas IQQM outputs are modelled extractions. Gwydir Valley Irrigators Association Inc. submission, October 2016.

204 New South Wales Government Gazette No 81 of 2 July 2008.

205 DPI Water has advised that the previous conversion factor of 3 was calculated on a hydrologic basis (under extreme drought conditions). Personal communication with DPI Water, 16 December 2016.

## Table 11.3 IPART's draft decision on security (conversion) factors for the 2017 Determination

| Valley | HS Entitlements | GS Entitlements | Long term average annual extraction limit (LTAAEL) | Security Factor |
|---|---|---|---|---|
| | A | B | C | D = B / (C - A) (Minimum 1.25) |
| Border | 3,058 | 265,000 | 399,400 | 1.25 |
| Gwydir | 27,374 | 509,500 | 392,000 | 1.40 |
| Namoi | 7,932 | 256,421 | 238,000 | 1.25 |
| Peel | 17,373 | 30,335 | 15,100 | 6.54[a] |
| Lachlan[b] | 59,455 | 631,078 | 312,370 | 2.50 |
| Macquarie | 56,365 | 632,428 | 391,900 | 1.88 |
| Murray | 669,435 | 1,915,325 | 1,890,200 | 1.57 |
| Murrumbidgee | 742,738 | 2,001,533 | 1,925,000 | 1.69 |
| North Coast[c] | 137 | 10,203 | 10,740 | 1.25 |
| Hunter[d] | 70,714 | 138,109 | 228,175 | 1.25 |
| South Coast | 5,721 | 13,954 | 16,728 | 1.27 |

**a** The security factor for Peel valley is adjusted for 6,910 inactive high security entitlements (ie, security factor = 30,335/(15,1000-17,373+6,910). This maintains the approach we adopted at the 2006 Determination which was done on a materiality basis of the Peel valley having a substantial number of inactive high security entitlements. Without the adjustment the security factor would be about '-13' (without the adjustment, the LTAAEL is less than the number of HS entitlements, suggesting there is a negative amount of water available for GS entitlement holders).

**b** Includes Belubula regulated river.

**c** We have not explicitly used the security factor for the North Coast, as our draft decision is to hold prices constant in real terms. Therefore, it has been displayed for information purposes only. We have also adjusted the number of HS entitlements for the North Coast to reflect current information, as the data in the WSP indicates that there are over 26,000 HS entitlements.

**d** Includes Paterson regulated river.

**Note:** HS entitlements include domestic and stock, local water utility, major utility and regulated river (HS) access licences. This information, including the number of GS entitlements has been sourced from each valley's WSP.

**Note:** A minimum security (conversion) factor of 1.25 applies

**Note:** Conveyance access licences for Lachlan, Murrumbidgee and Murray valleys were categorised into HS and GS entitlements according to available water determinations outlined in each valley's WSP.

**Note:** The LTAAEL for the Murray, North Coast and South Coast valleys are not explicitly stated in the WSP. The LTAAEL for these valleys were sourced directly from DPI Water.

**Table 11.4 IPART's draft decision on reliability ratios for the 2017 Determination**

| Valley | 20-year average HS water allocations | 20-year average GS water allocations | Reliability Ratio |
|---|---|---|---|
| | A | B | C=A / B |
| Border | 100% | 46% | 2.16 |
| Gwydir | 100% | 44% | 2.28 |
| Namoi | 100% | 58% | 1.72 |
| Peel | 98% | 62% | 1.58 |
| Lachlan | 83% | 37% | 2.26 |
| Macquarie | 100% | 40% | 2.52 |
| Murray | 95% | 61% | 1.56 |
| Murrumbidgee | 97% | 62% | 1.56 |
| North Coast[a] | 93% | 90% | 1.03 |
| Hunter | 100% | 97% | 1.03 |
| South Coast | 99% | 65% | 1.53 |

[a] 14-year average HS water allocations and 13-year average GS water allocations.

**Source:** WaterNSW Information Return, June 2016.

**Table 11.5 IPART's draft decision on HS premiums for the 2017 Determination compared to WaterNSW's proposal**

| Valley | Security Factor | Reliability Ratio | HS Premiums | WaterNSW's proposed HS premiums |
|---|---|---|---|---|
| | A | B | C = A × B | |
| Border | 1.25 | 2.16 | 2.69 | 2.76 |
| Gwydir | 1.40 | 2.28 | 3.19 | 4.13 |
| Namoi | 1.25 | 1.72 | 2.15 | 2.15 |
| Peel | 6.54 | 1.58 | 10.35 | 10.64 |
| Lachlan | 2.50 | 2.26 | 5.63 | 4.74 |
| Macquarie | 1.88 | 2.52 | 4.75 | 5.53 |
| Murray | 1.57 | 1.56 | 2.45 | 1.95 |
| Murrumbidgee | 1.69 | 1.56 | 2.65 | 2.55 |
| North Coast | 1.25 | 1.03 | 1.29 | 1.29 |
| Hunter | 1.25 | 1.03 | 1.29 | 3.09 |
| South Coast | 1.27 | 1.53 | 1.94 | 2.60 |

**Note**: Compared to the existing security (conversion) factors, our updated security factors are generally lower across most valleys. This is due to a combination of reasons including the introduction of WSPs for certain valleys (in 2006 for valleys where WSPs did not exist we estimated the LTAAELs), changes in the number of HS and/or GS entitlements in WSPs, and changes in the LTAAEL in WSPs.

**Source:** WaterNSW Information Return, June 2016; IPART analysis.

## 11.3 Structure of MDBA and BRC charges

As discussed in Chapter 4, WaterNSW's proposed revenue requirement includes a customer share for the pass-through of BRC and MDBA costs. WaterNSW has proposed to recover these charges via an annual 100% fixed entitlement charge on the basis that these are unavoidable costs.

WaterNSW has also proposed reducing the HS premium for BRC and MDBA charges, recognising that shifting to a 100% fixed charge would have a large bill impact on HS entitlement holders. Since the HS premium for BRC and MDBA charges is used to allocate the fixed component of these charges, the larger the fixed component in the tariff, the more of the BRC/MDBA charges are borne by HS entitlement holders. The proposed amended HS premiums are shown in Table 11.6 below.

Reducing the HS premium would shift some of the bill impact to GS entitlement holders. However, as there are substantially more GS entitlement holders than HS entitlement holders, the impacts of changing to 100% fixed charges would be spread and the average impact per customer would be smaller.

**Table 11.6 WaterNSW proposed MDBA/BRC HS premiums**

| | IPART's draft HS premium | WaterNSW's adjusted HS premium[a] |
|---|---|---|
| Border | 2.69 | 1.48 |
| Murray | 2.45 | 1.44 |
| Murrumbidgee | 2.65 | 1.39 |

a WaterNSW has proposed to adjust the HS premium (for MDBA/BRC charges only) such that it results in a neutral bill impact, *on average* for all customers, from changing to 100% fixed charges.

**Note:** The HS premium is used to determine how the fixed component of charges is split between GS and HS entitlement holders. So, for example, a HS premium of 2 would mean that HS entitlement holders pay double the fixed charges compared to GS entitlement holders.

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 146; WaterNSW Information Return, June 2016; IPART analysis.

We made draft decisions:

34 To:

- recover customers' share of MDBA and BRC costs through an 80:20 fixed to variable MDBA/BRC tariff structure
- apply the high security premiums as set out in Table 11.6 for the Border, Murray and Murrumbidgee valleys to MDBA and BRC charges.

### 11.3.1 Reasons for decision

#### MDBA and BRC pass through charges

Stakeholder submissions did not directly object to the 100% fixed MDBA/BRC charges in submissions and public hearings. However, they expressed a general preference towards variable charges in relation to bulk water. Stakeholders in the Murray and Murrumbidgee were concerned about the quantum and growth of MDBA charges.

As discussed above, for WaterNSW's bulk water charges, ideally, WaterNSW should have a price structure that better reflects its cost structure. From WaterNSW's perspective, its BRC and MDBA costs are 100% fixed, meaning a 40:60 fixed to variable price structure is not cost reflective.

Moving to a 100:0 tariff structure in a single year would create substantial bill impacts for HS customers. It would also mean WaterNSW transferring all of its revenue risk to

customers. As such, we consider an 80:20 fixed to variable tariff structure would be appropriate, for similar reasons outlined in the discussion above on Lowbidgee.

### MDBA and BRC HS premium

WaterNSW has recognised that a shift to a 100% fixed tariff structure would disproportionately impact HS entitlement holders. To mitigate bill impacts on HS customers, WaterNSW proposed to adjust the HS premium for BRC and MDBA costs.

WaterNSW's proposed change to the MDBA/BRC HS premium is based on calculating the premium that leads to a neutral bill outcome *on average* for all customers. That is, to reduce HS entitlement holders' bill impacts, WaterNSW has adjusted the premium to shift the burden to GS entitlement holders through higher prices per entitlement. This means that GS entitlement holders with relatively low usage could face large bill impacts.

The Commonwealth Environmental Water Office (CEWO) supported the proposed 100% fixed charge as the MDBA/BRC costs are fixed. However, CEWO considered it was unclear how the reduction in the HS premium was calculated, and how it fed through to prices. CEWO noted an apparent assumption that the savings provided to HS entitlement holders will be borne by GS entitlement holders. CEWO was unable to comment on the reasonableness of the proposed adjustment without further clarification on these issues.[206]

We note that without an adjustment to the premium, the bill impact on HS entitlement holders would be larger. However, we consider it is not appropriate, in principle, to reduce the bill impact on these entitlement holders by manipulating the HS premium and shifting costs onto GS entitlement holders. The HS premium serves a specific purpose – it is set to reflect the security and reliability of supply afforded to HS entitlement holders. As discussed above, the premium for each valley has been calculated using parameters that reflect each of these benefits to HS entitlement holders.

As such, our draft decision is to not apply a different HS premium for BRC and MDBA, but maintain the same HS premium we calculated for WaterNSW's bulk water charges.

## 11.4 Structure of Fish River Water Supply (FRWS)

In the FRWS, customers face a two-part tariff. However, as discussed in Chapter 10, they have a "minimum annual quantity" (MAQ) rather than a licensed entitlement, and fixed charges are based on a customer's MAQ.

Water usage in the FRWS has reduced significantly as a result of the closure of Wallerawang power station in 2014 (see Chapter 10). Wallerawang power station was the largest single water consumer in the FRWS. The power station is currently being decommissioned.

With the closure of Wallerawang, total annual water use by EnergyAustralia dropped by around 5 000 ML (about 55% of total FRWS usage in 2013-14). WaterNSW does not expect a significant increase in usage by other customers to take up the excess capacity. WaterNSW

206 CEWO submission, October 2016, pp 3-4.

stated that, following the closure of Wallerawang power station in 2014-15, the drop in usage led to a fall in revenue of around $1.8 million per year.[207]

MAQs are forecast to be the same as the 2014-17 period, as EnergyAustralia retains its MAQ.

In the FRWS, the ACCC set prices in 2014 to recover 55% of total revenue from fixed charges (ie, 55:45), though this ratio varies significantly between customers. To address the fall in usage, WaterNSW proposed to shift to an 80:20 tariff structure (80% fixed) for the FRWS.[208] This would shift the revenue burden from usage to fixed charges. By moving towards a higher proportion of fixed charges, this places more of the revenue burden on EnergyAustralia. WaterNSW stated that the majority of FRWS customers will not experience a bill increase by moving to an 80% fixed charge structure.[209]

We made a draft decision:

35 To apply a price structure which is approximately 80:20 fixed to variable for the Fish River Water Supply Scheme.

### Reasons for our draft decision

We considered WaterNSW's proposal and have decided to move to an 80:20 fixed to variable charge price structure for the FRWS. Moving to this structure would mean that:

- the price structure better reflects WaterNSW's (largely fixed) cost structure
- EnergyAustralia contributes an appropriate share of WaterNSW's costs incurred in providing infrastructure related to its MAQs
- other customers are not unduly impacted by the fall in usage resulting from the closure of Wallerawang power station.

As discussed earlier in this chapter, we consider an 80:20 fixed to variable tariff structure for WaterNSW achieves a reasonable balance between matching WaterNSW's largely fixed cost structure and distributing volume-related risk between WaterNSW and its customers.

For the FRWS, our decision to move the tariff structure towards 80:20 fixed to variable and set the UOM balance for the Wallerawang power station component of the Fish River scheme to zero (see Chapter 8) can also be seen as a combined package of measures to address a one-off structural change in demand.

The UOM was originally designed to respond to variations in usage arising from variability in climate – ie, it is not suited to addressing large structural changes in demand. Our decisions on the price structure and the UOM ensure that both EnergyAustralia and WaterNSW bear some of the costs related to structural change. EnergyAustralia would bear the costs of the move to an 80:20 fixed to variable structure (as its MAQ is unchanged), whereas WaterNSW would bear the cost of our decision to set the Wallerawang component of the UOM to zero. This effectively shares the costs of a major one-off structural change in demand in the FRWS across relevant stakeholders.

207 WaterNSW pricing proposal to IPART, June 2016, p 41.
208 WaterNSW pricing proposal to IPART, June 2016, p 42.
209 WaterNSW pricing proposal to IPART, June 2016, p 43.

# 12 Bulk water prices

In this chapter we outline our draft decisions on prices for each valley (and the Fish River Water Supply in section 12.3), which reflect our draft decisions on WaterNSW's revenue requirement, forecast water sales and entitlement numbers, and price structures discussed in the previous chapters.

We discuss our draft decisions on WaterNSW's:

- length of regulatory period and form of regulation in Chapter 3
- revenue requirements, including MDBA/BRC costs and costs that reflect volatility risk and the UOM; as well as how these will be shared between customers and the Government in Chapters 4 to 9
- forecast water sales and entitlement numbers in Chapter 10
- price structures in Chapter 11.

We have considered valleys that are substantially below full cost recovery (FCR), ie, the North Coast and South Coast valleys, separately. We discuss our approach to setting prices in these valleys in section 12.4.

We have also considered the Fish River Water Supply (FRWS) separately, and present our draft prices for the FRWS in section 12.3.

In presenting our draft bulk water prices, we report three prices:

1. bulk water prices for all valleys (based on WaterNSW's revenue requirement) (excluding MDBA and BRC pass through charges)
2. MDBA and BRC pass through charges for three valleys (the Border, Murray and Murrumbidgee valleys), and
3. final prices (bulk water prices and pass through costs - ie, 1 and 2 combined).

We consider it is important to present bulk water charges and MDBA/BRC prices transparently. Additionally, it is important that customers can understand the final prices they would face under our draft decisions, accounting for all bulk water services provided in their valley.

The price tables presented in this chapter contain our draft prices for bulk water services. Each of the tables also includes the current 2016-17 price as a comparator and the percentage change from 2016-17 to the last year of WaterNSW's proposal, 2020-21.

We discuss the impacts of our draft prices on customer bills and WaterNSW in Chapter 14.

## 12.1 Entitlement charges

We made a draft decision:

36 To set high security and general security entitlement charges as listed in Table 12.1, Table 12.2 and Table 12.3.

Table 12.1 shows our draft prices for WaterNSW's fixed bulk water charges for high security (HS) and general security (GS) entitlements by valley for the 2017 Determination. The prices exclude MDBA and BRC costs.

**Table 12.1 WaterNSW bulk water draft entitlement charges by valley ($/ML of entitlement, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| **High security entitlement charge** | | | | | | |
| Border | 6.90 | 5.17 | 5.17 | 5.17 | 5.17 | -25.1% |
| Gwydir | 14.13 | 10.25 | 10.25 | 10.25 | 10.25 | -27.5% |
| Namoi | 17.29 | 15.52 | 15.52 | 15.52 | 15.52 | -10.2% |
| Peel | 35.27 | 20.77 | 20.77 | 20.77 | 20.77 | -41.1% |
| Lachlan | 16.48 | 15.26 | 15.26 | 15.26 | 15.26 | -7.4% |
| Macquarie | 16.17 | 11.75 | 11.75 | 11.75 | 11.75 | -27.4% |
| Murray | 1.79 | 1.92 | 1.92 | 1.92 | 1.92 | 7.7% |
| Murrumbidgee | 3.08 | 2.95 | 2.95 | 2.96 | 2.96 | -3.9% |
| Lowbidgee | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| North Coast | 9.54 | 9.54 | 9.54 | 9.54 | 9.54 | 0.0% |
| Hunter | 26.03 | 13.02 | 13.02 | 13.02 | 13.02 | -50.0% |
| South Coast | 21.12 | 18.26 | 18.26 | 18.26 | 18.26 | -13.6% |
| **General security entitlement charge** | | | | | | |
| Border | 2.43 | 2.51 | 2.52 | 2.53 | 2.55 | 4.9% |
| Gwydir | 3.47 | 4.37 | 4.40 | 4.42 | 4.44 | 27.9% |
| Namoi | 8.25 | 9.78 | 9.84 | 9.89 | 9.94 | 20.6% |
| Peel | 3.88 | 2.73 | 2.73 | 2.73 | 2.73 | -29.5% |
| Lachlan | 3.28 | 3.55 | 3.57 | 3.59 | 3.61 | 10.1% |
| Macquarie | 3.62 | 3.34 | 3.36 | 3.38 | 3.39 | -6.3% |
| Murray | 0.97 | 0.88 | 0.88 | 0.88 | 0.89 | -8.6% |
| Murrumbidgee | 1.26 | 1.22 | 1.22 | 1.22 | 1.22 | -3.0% |
| Lowbidgee | 0.84 | 0.64 | 0.64 | 0.64 | 0.64 | -23.6% |
| North Coast | 7.25 | 7.25 | 7.25 | 7.25 | 7.25 | 0.0% |
| Hunter | 8.86 | 10.15 | 10.15 | 10.15 | 10.15 | 14.6% |
| South Coast | 10.09 | 10.61 | 10.61 | 10.61 | 10.61 | 5.1% |

**Note:** Prices exclude MDBA and BRC costs for the Border, Murray and Murrumbidgee valleys.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 97-98; IPART analysis.

Table 12.2 shows our draft MDBA and BRC entitlement charges, which apply to the Border, Murray and Murrumbidgee valleys, for the 2017 Determination (based on our draft decisions in Chapter 8).

**Table 12.2 MDBA and BRC draft entitlement charges by valley ($/ML, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| **High security MDBA/BRC entitlement charge** | | | | | | |
| Border | 4.22 | 5.96 | 5.96 | 5.96 | 5.96 | 41.2% |
| Murray | 3.22 | 8.68 | 8.68 | 8.68 | 8.68 | 169.8% |
| Murrumbidgee | 0.72 | 1.64 | 1.64 | 1.64 | 1.64 | 129.3% |
| **General security MDBA/BRC entitlement charge** | | | | | | |
| Border | 1.49 | 2.21 | 2.21 | 2.21 | 2.21 | 49.1% |
| Murray | 1.74 | 3.54 | 3.54 | 3.54 | 3.54 | 103.1% |
| Murrumbidgee | 0.29 | 0.62 | 0.62 | 0.62 | 0.62 | 110.9% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 100; IPART analysis.

Table 12.3 shows our final combined draft entitlement charges for the 2017 Determination, ie, the bulk water charges, including MDBA and BRC charges.

**Table 12.3 Combined draft entitlement charges – WaterNSW bulk water charges including MDBA/BRC charges by valley ($/ML of entitlement, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| **High security entitlement charge** | | | | | | |
| Border | 11.12 | 11.13 | 11.13 | 11.13 | 11.13 | 0.1% |
| Gwydir | 14.13 | 10.25 | 10.25 | 10.25 | 10.25 | -27.5% |
| Namoi | 17.29 | 15.52 | 15.52 | 15.52 | 15.52 | -10.2% |
| Peel | 35.27 | 20.77 | 20.77 | 20.77 | 20.77 | -41.1% |
| Lachlan | 16.48 | 15.26 | 15.26 | 15.26 | 15.26 | -7.4% |
| Macquarie | 16.17 | 11.75 | 11.75 | 11.75 | 11.75 | -27.4% |
| Murray | 5.00 | 10.60 | 10.61 | 10.61 | 10.61 | 111.9% |
| Murrumbidgee | 3.79 | 4.60 | 4.60 | 4.60 | 4.60 | 21.3% |
| Lowbidgee | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| North Coast | 9.54 | 9.54 | 9.54 | 9.54 | 9.54 | 0.0% |
| Hunter | 26.03 | 13.02 | 13.02 | 13.02 | 13.02 | -50.0% |
| South Coast | 21.12 | 18.26 | 18.26 | 18.26 | 18.26 | -13.6% |
| **General security entitlement charge** | | | | | | |
| Border | 3.91 | 4.72 | 4.73 | 4.75 | 4.76 | 21.7% |
| Gwydir | 3.47 | 4.37 | 4.40 | 4.42 | 4.44 | 27.9% |
| Namoi | 8.25 | 9.78 | 9.84 | 9.89 | 9.94 | 20.6% |
| Peel | 3.88 | 2.73 | 2.73 | 2.73 | 2.73 | -29.5% |
| Lachlan | 3.28 | 3.55 | 3.57 | 3.59 | 3.61 | 10.1% |
| Macquarie | 3.62 | 3.34 | 3.36 | 3.38 | 3.39 | -6.3% |
| Murray | 2.71 | 4.42 | 4.42 | 4.43 | 4.43 | 63.2% |
| Murrumbidgee | 1.56 | 1.84 | 1.84 | 1.84 | 1.84 | 18.6% |
| Lowbidgee | 0.84 | 0.64 | 0.64 | 0.64 | 0.64 | -23.6% |
| North Coast | 7.25 | 7.25 | 7.25 | 7.25 | 7.25 | 0.0% |
| Hunter | 8.86 | 10.15 | 10.15 | 10.15 | 10.15 | 14.6% |
| South Coast | 10.09 | 10.61 | 10.61 | 10.61 | 10.61 | 5.1% |

**Note:** Prices include MDBA and BRC costs for the Border, Murray and Murrumbidgee valleys.

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 101; IPART analysis.

### 12.1.1 Reasons for our draft decision

Our draft high security and general security entitlement charges reflect our draft decisions on WaterNSW's revenue requirement, forecast water sales and entitlement numbers, and price structures discussed in the previous chapters.[210]

210 For the North Coast and South Coast valleys, the charges follow from our draft decisions on setting prices below FCR in section 12.4

Under our draft decision, combined high security entitlement charges per megalitre decrease in most valleys compared to current prices. High security entitlement charges increase (compared to current prices) in some valleys:

- **Border, Murray and Murrumbidgee valleys** – There are increases in high security entitlement charges in these valleys primarily due to the large increase in BRC and MDBA costs (see Chapter 8). In the Murray valley, the increase, in part, can also be attributed to our decision to update the High Security (HS) premium, which results in a higher premium (see Chapter 11).

Compared to WaterNSW's proposed prices, our combined draft high security entitlement charges per megalitre are lower for most valleys, excluding the:

- **Lachlan valley** – Our draft high security entitlement charge in the Lachlan valley is slightly higher than WaterNSW's proposed charge (by $0.45). This can be attributed to our decision to include a volatility allowance that is higher for high security charges than what WaterNSW had proposed (see Chapter 8).
- **Border, Murray and Murrumbidgee valleys** – Our draft high security entitlement charges in these valleys are higher than those proposed by WaterNSW (by $1.40, $0.17 and $0.08 respectively). This is primarily due to our decision to maintain the same HS premiums we calculated for WaterNSW's bulk water charges for the MDBA and BRC components. WaterNSW proposed reducing the HS premium for MDBA and BRC charges (see Chapter 11).

Under our draft decision, combined general security entitlement charges per megalitre increase in a number of valleys compared to current prices, including:

- **Gwydir and Hunter valleys** – Increases are offset by a decrease in the high security entitlement charges in these valleys, and occur as a result of our decision to reduce the HS premiums in these valleys (Chapter 11).
- **Lachlan and Namoi valleys** – Increases in these valleys can be attributed to our decision to allow a volatility allowance and payback of the UOM balance (see Chapter 8).
- **Border, Murray and Murrumbidgee valleys** – Increases in these valleys are primarily due to the large increase in BRC and MDBA costs (see Chapter 8). In the Border valley, the increase is also driven by a small reduction in the HS premium in this valley (see Chapter 11).
- **South Coast valley** – The small increase in the South Coast valley follows from our new approach to setting prices in valleys below FCR (see section 12.4). The increase is also driven by a small reduction in the HS premium in this valley (see Chapter 11).

Compared to WaterNSW's proposed prices, our combined draft general security entitlement charges per megalitre are also lower for most valleys, excluding the:

- **Gwydir and Hunter valleys** – Our draft general security entitlement charges in the Gwydir and Hunter valleys are higher than those proposed by WaterNSW (by $0.27 and $2.82 respectively). This is also as a result of our decision to reduce the HS premiums in these valleys (Chapter 11).

- **Namoi valley** – Our draft general security entitlement charge in the Namoi valley is higher than that proposed by WaterNSW (by $0.30). Again, this is due to our decision to allow a volatility allowance and payback of the UOM balance (see Chapter 8).

## 12.2 Usage charges

We made draft decisions:

37 To set usage charges as listed in Table 12.4, Table 12.5 and Table 12.6.

38 To maintain levying usage charges on customers trading water allocation (also known as a 'temporary trade') to persons who do not hold a NSW water access licence with an associated water supply works and complying metering (eg, for interstate trades), to recover the prudent and efficient infrastructure costs WaterNSW incurs in holding and releasing bulk water when it is traded out of NSW.

Table 12.4 shows our draft WaterNSW usage charges over the 2017 Determination. The prices exclude MDBA and BRC costs.

**Table 12.4 WaterNSW bulk water draft usage charges by valley ($/ML, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| Border | 6.60 | 5.28 | 5.28 | 5.28 | 5.28 | -19.9% |
| Gwydir | 12.13 | 11.00 | 11.00 | 11.00 | 11.00 | -9.3% |
| Namoi | 20.26 | 18.12 | 18.12 | 18.12 | 18.12 | -10.6% |
| Peel | 58.26 | 54.97 | 54.97 | 54.97 | 54.97 | -5.6% |
| Lachlan | 21.12 | 18.20 | 18.20 | 18.20 | 18.20 | -13.8% |
| Macquarie | 16.97 | 11.98 | 11.98 | 11.98 | 11.98 | -29.4% |
| Murray | 2.31 | 2.00 | 2.00 | 2.00 | 2.00 | -13.7% |
| Murrumbidgee | 3.53 | 3.24 | 3.24 | 3.24 | 3.24 | -8.2% |
| Lowbidgee | 0.00 | 2.09 | 2.09 | 2.09 | 2.09 | - |
| North Coast | 45.04 | 45.04 | 45.04 | 45.04 | 45.04 | 0.0% |
| Hunter | 14.77 | 12.49 | 12.49 | 12.49 | 12.49 | -15.5% |
| South Coast | 40.38 | 42.08 | 42.08 | 42.08 | 42.08 | 4.2% |

**Note:** Prices exclude MDBA and BRC costs for the Border, Murray and Murrumbidgee valleys.
**Source:** WaterNSW pricing proposal to IPART, June 2016, p 99; IPART analysis.

Table 12.5 shows our draft prices for MDBA and BRC usage charges, which apply to the Border, Murray and Murrumbidgee valleys, for the 2017 Determination (based on our draft decisions in Chapter 8).

**Table 12.5 MDBA and BRC draft usage charges by valley ($/ML, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| Border | 4.03 | 1.01 | 1.01 | 1.01 | 1.01 | -74.9% |
| Murray | 4.17 | 1.56 | 1.56 | 1.56 | 1.56 | -62.5% |
| Murrumbidgee | 0.82 | 0.31 | 0.31 | 0.31 | 0.31 | -63.0% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 100; IPART analysis.

Table 12.6 shows our final combined draft usage charges for the 2017 Determination, ie, the bulk water charges, including MDBA and BRC charges.

**Table 12.6 Combined draft usage charges – WaterNSW bulk water charges including MDBA/BRC charges by valley ($/ML, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| Border | 10.63 | 6.30 | 6.30 | 6.30 | 6.30 | -40.8% |
| Gwydir | 12.13 | 11.00 | 11.00 | 11.00 | 11.00 | -9.3% |
| Namoi | 20.26 | 18.12 | 18.12 | 18.12 | 18.12 | -10.6% |
| Peel | 58.26 | 54.97 | 54.97 | 54.97 | 54.97 | -5.6% |
| Lachlan | 21.12 | 18.20 | 18.20 | 18.20 | 18.20 | -13.8% |
| Macquarie | 16.97 | 11.98 | 11.98 | 11.98 | 11.98 | -29.4% |
| Murray | 6.48 | 3.56 | 3.56 | 3.56 | 3.56 | -45.1% |
| Murrumbidgee | 4.36 | 3.55 | 3.55 | 3.55 | 3.55 | -18.6% |
| Lowbidgee | 0.00 | 2.09 | 2.09 | 2.09 | 2.09 | - |
| North Coast | 45.04 | 45.04 | 45.04 | 45.04 | 45.04 | 0.0% |
| Hunter | 14.77 | 12.49 | 12.49 | 12.49 | 12.49 | -15.5% |
| South Coast | 40.38 | 42.08 | 42.08 | 42.08 | 42.08 | 4.2% |

**Note:** Prices include MDBA and BRC costs for the Border, Murray and Murrumbidgee valleys.
**Source:** WaterNSW pricing proposal to IPART, June 2016, p 101; IPART analysis.

### 12.2.1 Reasons for our draft decision

Our draft usage charges reflect our draft decisions on WaterNSW's revenue requirement, forecast water sales and entitlement numbers, and price structures discussed in the previous chapters.[211]

Under our draft decision, combined usage charges per megalitre decrease in most valleys compared to current prices. Usage charges increase (compared to current prices) in the South Coast valley:

- **South Coast valley** – The small increase in usage charges in this valley follows from our new approach to setting prices in valleys below FCR (see section 12.4). The increase is also driven by a small reduction in the HS premium in this valley (see Chapter 11).

Compared to WaterNSW's proposed prices, our combined draft usage charges per megalitre are also lower for most valleys, excluding the:

- **Border, Murray and Murrumbidgee valleys** – Our draft usage charges in these valleys are higher than those proposed by WaterNSW (by $0.77, $1.59 and $0.23 respectively). This is due to our decision to change the tariff structure for MDBA and BRC charges from 100% fixed (ie, previously there was no usage charge) to an 80:20 fixed to variable tariff structure (ie, such that 20% of MDBA and BRC costs are recovered via usage charges) (see Chapter 11).

211 For the North Coast and South Coast valleys, the charges follow from our draft decisions on setting prices below FCR in section 12.4

- **Lowbidgee valley –** Our draft usage charge in this valley is higher than that proposed by WaterNSW (by $2.09) as a result of our decision to change the tariff structure in this valley from 100% fixed to an 80:20 fixed to variable tariff structure (see Chapter 11).

### Usage charges levied on customers trading water allocation

WaterNSW proposed that levying usage charges on customers trading water allocation[212] to persons who do not hold a NSW water access licence (eg, as for interstate trades) be maintained.[213]

#### ACCC review of the WCIR

In November 2015, the ACCC released a proposed rule change under the WCIR review that would, in effect, prohibit WaterNSW from levying usage charges for temporary allocation trades to a buyer who does not hold a NSW water access licence with an associated water supply works and complying metering.[214] The ACCC's draft advice proposed that the rules should be extended to prohibit infrastructure charges imposed by an operator as a condition of, or as a result of, trade of a tradeable water right that are beyond the operator's actual trade processing administrative costs.[215]

In its pricing proposal, WaterNSW indicated that it did not support the ACCC's draft rule change.[216] Under its two-part tariff, WaterNSW uses the volume of water entitlement held and used by a customer as a proxy for that customer's consumption of infrastructure services (ie, the storage and delivery of water) and therefore its liability for infrastructure charges (levied via entitlement and usage charges).[217,218]

However, in its submission to our Issues Paper, another stakeholder, Waterfind Australia Pty Ltd, stated that the usage charges levied on customers trading water allocation interstate create a significant trade barrier in the Southern Connected MDB temporary water market. As such, Waterfind supported the ACCC's proposed rule change.[219]

WaterNSW stated in its pricing proposal that failure to consider trade usage would lower the effective total volume of water 'used', which would increase the price per megalitre of water, thereby moving the cost burden to water users who do not trade their water.[220]

Currently, to address this issue, WaterNSW bills usage charges where the receiver of a water allocation trade does not have a NSW Works Approval[221] at the time of trade to recover prudent and efficient infrastructure costs it incurs in holding and releasing bulk water when

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212 A water allocation is a type of 'water access right' and refers to a specific volume of water allocated to a water access entitlement (WAE) in a given accounting period (ie, the transfer of a current year allocation or part thereof). Trade of a water allocation is sometimes referred to as a 'temporary trade'. ACCC, *Review of the Water Charge Infrastructure Rules – Final Advice*, September 2016, pp vii, 8-9.

213 WaterNSW pricing proposal to IPART, June 2016, pp 114-117.

214 WaterNSW pricing proposal to IPART, June 2016, p 116.

215 ACCC, *Review of the Water Charge Infrastructure Rules – Final Advice*, September 2016, p 83.

216 WaterNSW pricing proposal to IPART, June 2016, pp 114-117.

217 ACCC, *Review of the Water Charge Infrastructure Rules – Final Advice*, September 2016, p 9.

218 Water allocation can be assigned (or transferred) on a temporary basis (for that year). This assignment or dealing has no permanent effect on the share component of the licence (ie, on the WAE). WaterNSW pricing proposal to IPART, June 2016, p 114.

219 Waterfind Australia Pty Ltd submission to IPART Issues Paper, October 2016, pp 1-3.

220 WaterNSW pricing proposal to IPART, June 2016, p 115.

221 As there is currently no mechanism to track and charge for usage outside of NSW.

it is traded out of NSW.[222] WaterNSW considers this approach an equitable, transparent and administratively feasible solution to the loss of revenue that would otherwise occurred from interstate trade. WaterNSW also considers that this approach improves trade outcomes by preventing market distortions that exist when prudent and efficient infrastructure costs are not reflected in a trade transaction.[223]

In our 2010 Determination, we considered that the usage of water included the extraction and trade of water, and endorsed WaterNSW's approach as we considered that it was a fair and reasonable proposition from the then State Water to recover the costs that it incurs from those who benefit from the sale of water which it delivers.[224]

In the ACCC's final advice (made public in November 2016), the proposed rule change regarding usage charges levied on customers trading water allocation, was not recommended. The ACCC noted that the initially proposed rule change would have been too inflexible and involve significant regulatory costs.[225]

The ACCC also recognised that in a situation where variable charges (levied on the volume of water delivered, as WaterNSW's usage charges are) are used to recover fixed costs, a decision by a customer not to have water delivered has the potential to impact on the operator's cost recovery – ie, where a customer trades water allocation such that the buyer is not able to be charged a variable charge by the operator providing the infrastructure service (eg, because the buyer is located beyond the jurisdiction of the operator).[226]

The ACCC also acknowledged that as WaterNSW currently recovers a portion of its fixed costs through variable charges, and is limited to levying a single variable charge to encompass a bundle of infrastructure services, it could be considered reasonable to impose the variable charge on all customers receiving any relevant infrastructure service.[227]

The ACCC's final rule advice 5-D (and proposed rule 10) advises that an infrastructure operator should not be able to impose an infrastructure charge when a person applies to trade, as a condition of trade, or because a person has traded, other than a charge which reflects the reasonable and efficient administrative costs incurred to process a trade or to recover the costs of an infrastructure service provided in relation to a trade.[228,229]

Rule advice 5-D (and proposed rule 10-A) also state that the rules should not prohibit an infrastructure operator from levying an infrastructure charge in relation to trade, when:

i) the operator has provided an infrastructure service for the harvesting or storage of the water relating to the water access right being traded; or

ii) the operator is required to provide a service for the storage or delivery of water to give effect to the trade; or

iii) both the following apply:

222 Ie, when WaterNSW receives an application for an assignment of water allocation dealings.
223 WaterNSW pricing proposal to IPART, June 2016, p 115.
224 IPART, *Review of bulk water charges for State Water Corporation – Final Report*, June 2010, p 166.
225 ACCC, *Review of the Water Charge Infrastructure Rules – Final Advice*, September 2016, p 91.
226 ACCC, *Review of the Water Charge Infrastructure Rules – Final Advice*, September 2016, p 90.
227 ACCC, *Review of the Water Charge Infrastructure Rules – Final Advice*, September 2016, p 91.
228 ACCC, *Review of the Water Charge Infrastructure Rules – Final Advice*, September 2016, p 83.
229 ACCC, *Water Charge Rules 2010 – Version for Minister*, September 2016, Rule 10.

a) the operator is required to provide a service for the storage or delivery of water to the buyer after a trade occurs; and

b) the operator is unable to levy a charge on the person receiving the service because the operator has no authority to levy a charge on that person (for example, because that person is located in a different jurisdiction to the infrastructure operator).[230,231]

The revised advice allows WaterNSW to continue its current practice of levying a charge equivalent to the valley-of-origin variable (ie, usage) charge when water is traded interstate.[232]

We have decided to levy usage charges on all customers trading water, irrespective of whether the water is traded inside or outside of NSW. This allows WaterNSW to continue to recover the prudent and efficient infrastructure costs it incurs in holding and releasing bulk water when it is traded. To do otherwise would result in lost revenue for traded water allocations, which would shift the cost burden to water users that do not trade their water.

Usage fees payable by customers who trade their allocations should be referrable to the best available information held by WaterNSW as to usage by a trade recipient. In the case of trade recipients with a WaterNSW meter, this will be the metered volume of water extracted by that person. In the case of trade recipients without a WaterNSW meter, we have decided that:

- usage fees should be referrable to the metered volume of water extracted by that person where WaterNSW has access to relevant metering information, or
- where such information is not reasonably available, WaterNSW's best estimate of the volume of water extracted by that person (up to the amount of the allocation transferred).

## 12.3 Fish River Water Supply (FRWS)

The FRWS was originally constructed in the 1940s, to provide more secure water supplies to Oberon, Lithgow and the NSW Central Tablelands. It originally included a 105 km pipeline to bring water from Oberon to the shale oil works at Glen Davis, a WWII fuel production project. The scheme was extended in the 1950s to cater for demand at the new Wallerawang power stations, and again in the 1960s to divert water to Katoomba.

The FRWS delivers raw bulk water and filtered water to local councils, Energy Australia and individual customers. Recently, water usage in the FRWS has reduced markedly as a result of the closure of Wallerawang power station by EnergyAustralia in 2014-15.

In the FRWS, customers face a two-part tariff. However, they have a "minimum annual quantity" (MAQ) rather than a licensed entitlement, and fixed charges are based on a customer's MAQ.

230 ACCC, *Review of the Water Charge Infrastructure Rules – Final Advice*, September 2016, p 83.
231 ACCC, *Water Charge Rules 2010 – Version for Minister*, September 2016, Rule 10, Rule 10A.
232 ACCC, *Review of the Water Charge Infrastructure Rules – Final Advice*, September 2016, p 92.

### 12.3.1 Prices for FRWS

We made a draft decision:

39 To set prices for the FRWS as shown in Table 12.7.

**Table 12.7 Draft decision on prices for the FRWS ($2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Change 2017-21 | % increase 2017-21 |
|---|---|---|---|---|---|---|---|
| **Bulk Raw Water** | | | | | | | |
| **Minimum Annual Quantity (MAQ) ($/kL)** | | | | | | | |
| Major customers | 0.38[a] | 0.41 | 0.41 | 0.41 | 0.41 | 0.03 | 9.0% |
| Minor customers | 0.36 | 0.41 | 0.41 | 0.41 | 0.41 | 0.06 | 16.2% |
| **Usage up to MAQ ($/kL)** | | | | | | | |
| Major customers | 0.43[a] | 0.26 | 0.26 | 0.26 | 0.26 | -0.17 | -39.5% |
| Minor customers | 0.42 | 0.26 | 0.26 | 0.26 | 0.26 | -0.16 | -37.9% |
| **Usage in excess of MAQ ($/kL)** | | | | | | | |
| Major customers | 0.81 | 0.67 | 0.67 | 0.67 | 0.67 | -0.14 | -16.8% |
| Minor customers | 0.78 | 0.67 | 0.67 | 0.67 | 0.67 | -0.10 | -13.0% |
| **Bulk Filtered Water** | | | | | | | |
| **Minimum Annual Quantity (MAQ) ($/kL)** | | | | | | | |
| Major customers | 0.57 | 0.67 | 0.68 | 0.68 | 0.68 | 0.11 | 18.7% |
| Minor customers | 0.69 | 0.82 | 0.82 | 0.82 | 0.82 | 0.13 | 18.9% |
| **Usage up to MAQ ($/kL)** | | | | | | | |
| Major customers | 0.61 | 0.38 | 0.38 | 0.38 | 0.38 | -0.23 | -37.9% |
| Minor customers | 0.78 | 0.49 | 0.49 | 0.49 | 0.49 | -0.30 | -37.9% |
| **Usage in excess of MAQ ($/kL)** | | | | | | | |
| Major customers | 1.18 | 1.05 | 1.05 | 1.05 | 1.06 | -0.12 | -10.6% |
| Minor customers | 1.47 | 1.30 | 1.30 | 1.30 | 1.31 | -0.17 | -11.3% |

**a** In 2016-17, Energy Australia had the same price as the minor customers.

**Note:** WaterNSW currently has three major raw water customers – Energy Australia, WaterNSW (Greater Sydney) and Oberon Council. WaterNSW currently has only one major filtered water customer – Lithgow Council. Minor customers are individual minor customers.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 103-104; IPART analysis.

#### Reasons for our draft decision

Most of the prices for the FRWS raw and filtered water are decreasing over the 2017 determination period. For the 2017 Determination, WaterNSW proposed a reduction in

customer share operating expenditure for the Fish River of approximately $2.4 million (or 45.2%) per annum relative to the 2014 Determination period.[233]

Our decision on WaterNSW's operating expenditure for the Fish River is broadly in line with WaterNSW's forecasts. This results in usage charges in the Fish River scheme that are generally decreasing over the 2017 Determination period. However, MAQ charges increase due to our decision to move the tariff structure towards 80:20 fixed to variable (see Chapter 11). In nominal terms, this also results in higher bills for FRWS customers than those proposed by WaterNSW (see Chapter 14).

Our draft determination sets prices for any new customers in the FRWS. Any new customers in the FRWS would have a MAQ of zero, and pay only the usage charge in excess of the MAQ. This ensures that new customers pay cost-reflective charges which are broadly in line with existing customers.

## 12.4 Setting prices in valleys below full cost recovery

When possible, we aim to set prices that fully recover the customers' share of WaterNSW's efficient costs (ie, the customer's share of the NRR). This approach ensures customers receive efficient price signals, which means that resources are used and allocated efficiently, and customers and taxpayers fairly share the costs of services.

Curently there are two valleys that are well below FCR:

- North Coast valley, and
- South Coast valley.

WaterNSW's prices currently recover only about 12% and 42% of the customers' share of its efficient costs for the North Coast and South Coast valleys, respectively.[234] All other valleys are currently at FCR. FCR is likely to be unattainable in the North Coast and South Coast valleys over the 2017 Determination period and beyond.

For the 2017 Determination, we have decided not to set prices in these valleys based on FCR prices. Instead we have decided to set prices in valleys substantially below FCR using a new approach that considers WaterNSW's customers' 'capacity to pay'[235] in these valleys and WaterNSW's avoided costs.

We made draft decisions:

40 Not to set prices based on full cost recovery (FCR) of the notional revenue requirement in valleys substantially below FCR, ie, in the North Coast and South Coast valleys.

41 To set prices in valleys substantially below full cost recovery, ie, in the North Coast and South Coast valleys, using a new methodology. Under this new approach prices would be

233 IPART, *Review of prices for WaterNSW – Rural bulk water service from 1 July 2017 – Issues Paper*, September 2016, p 39.

234 IPART, *Review of prices for WaterNSW – Rural bulk water service from 1 July 2017 – Issues Paper*, September 2016, p 8.

235 A customer's capacity to pay represents the dollar value up to which they would pay for a unit of a good or service, in this case, a ML of bulk water supply.

set within the efficient pricing band for each of these valleys, where the efficient pricing band lies between:

- an upper limit that represents an irrigation customer's capacity to pay for WaterNSW's services
- a lower limit that represents the cost that WaterNSW would avoid if it did not have to supply those services to that customer.

42 To set prices for the 2017 Determination for the:

- North Coast valley slightly below the smoothed mid-point (weighted based on forecast volume of entitlements) of the efficient pricing band for this valley by freezing prices at the current 2016-17 price level in real terms over the 2017 determination period, as listed in Table 12.11
- South Coast based on the smoothed mid-point (weighted based on forecast volume of entitlements) of the efficient pricing band for this valley, as listed in Table 12.12.

### 12.4.1 Reasons for our draft decision

Below we explain why we have decided to adopt a new approach to setting prices in valleys below FCR and how we have determined draft prices using this new approach. We also present our draft prices for the North Coast and South Coast valleys for the 2017 determination period.

#### Current approach would price customers out before FCR achieved

FCR is likely to be unattainable in the North Coast and South Coast valleys over this determination and going forward.

In our 2010 Determination, we decided to transition prices in the North Coast and South Coast valleys towards levels that would achieve FCR. Given the low level of cost recovery, real price increases were capped at 10% per year, to reduce adverse customer impacts.[236]

For the 2017 Determination, WaterNSW has proposed to continue the transition towards FCR and to cap annual price increases at 10% per year in these valleys (Table 12.8 and Table 12.9). Under its proposed prices, both these valleys would continue to be well below FCR, recovering only 13% and 49% (respectively) of the customer share of costs by 2021.

236 Prices in the North Coast and South Coast valleys have remained constant in nominal terms since 2013-14, due to the deferral of our scheduled 2014 Determination.

**Table 12.8 WaterNSW proposed prices for the North Coast and South Coast for the 2017 determination period ($/ML, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| **North Coast** | | | | | | |
| Usage charge | 45.04 | 48.34 | 51.87 | 55.67 | 59.74 | 32.6% |
| HS entitlement charge | 9.54 | 10.24 | 10.99 | 11.79 | 12.65 | 32.6% |
| GS entitlement charge | 7.25 | 7.78 | 8.35 | 8.96 | 9.62 | 32.6% |
| **South Coast** | | | | | | |
| Usage charge | 40.38 | 43.33 | 46.51 | 49.91 | 53.56 | 32.6% |
| HS entitlement charge | 21.12 | 22.67 | 24.32 | 26.10 | 28.01 | 32.6% |
| GS entitlement charge | 10.09 | 10.83 | 11.62 | 12.47 | 13.38 | 32.6% |

**Source:** IPART, *Review of prices for WaterNSW – Rural bulk water service from 1 July 2017 – Issues Paper*, September 2016, p 101.

**Table 12.9 WaterNSW's proposed recovery of customer share of costs in North Coast and South Coast valleys over 2017 Determination period ($000, $2016-17)**

| Valley | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 4-year Total (NPV) |
|---|---|---|---|---|---|
| **Costs** | | | | | |
| North Coast | 1,021 | 1,004 | 1,019 | 1,014 | 3,607 |
| South Coast | 872 | 848 | 861 | 867 | 3,063 |
| **Revenue** | | | | | |
| North Coast | 107 | 114 | 123 | 132 | 421 |
| South Coast | 341 | 366 | 393 | 422 | 1,348 |
| **Cost-recovery %** | | | | | |
| North Coast | 10% | 11% | 12% | 13% | 12% |
| South Coast | 39% | 43% | 46% | 49% | 44% |

**Source:** WaterNSW Information Return, June 201; IPART analysis.

FCR prices in the North Coast and South Coast valleys are substantially higher compared to other valleys (Table 12.10). This is due to a number of factors including that these valleys have:

- the fewest customers of all of WaterNSW's valleys
- the lowest volume of entitlements and average annual water usage

- a low level of extractions relative to the volume of entitlements, suggesting significant under-utilisation of entitlements by licence holders (in the North Coast valley in particular)[237]
- relatively small dams, with a higher cost per unit of storage capacity.

**Table 12.10 2017-18 FCR prices for North Coast and South Coast valleys ($2016-17)**

| | North Coast | South Coast | All other valleys |
|---|---|---|---|
| Usage charge ($/ML) | $696 | $136 | Up to $55 |
| HS entitlement charge ($/ML of entitlement) | $78 | $41 | Up to $21 |
| GS entitlement charge ($/ML of entitlement) | $60 | $21 | Up to $10 |

**Note:** 'All other valleys' excludes Fish River.

**Source:** IPART analysis.

At current prices and the 10% glide path towards FCR, there have been **declining customer numbers and average water sales in the North Coast and South Coast valleys**.[238] This indicates that prices may be approaching customers' capacity to pay in these valleys and that further substantial price increases towards FCR may price customers out of the market *before* FCR is achieved in these valleys.

At prices above a customer's capacity to pay, the customer would no longer purchase water. As such, the demand for rural bulk water services would reduce, further reducing the number of customers, usage and entitlement volumes, and revenue and level of cost recovery in that valley. This would result in further FCR price increases to recover costs, as costs would then need to be recovered from a smaller number of customers. Setting prices based on FCR is therefore unlikely to be achieved in the North Coast and South Coast valleys.

In response to our Issues Paper, a number of stakeholders commented on prices in the North Coast and South Coast valleys (see Box 12.1).

237 In 2016, we commissioned a scoping study to investigate utilisation of system capacities in the North Coast and South Coast valleys. Findings of the study indicate that the North Coast and South Coast systems are substantially under-used (with utilisation at about 5% and 23% respectively). In comparison, utilisation in the Hunter and Peel systems is about 57% to 75%, and 77% to 83% respectively, and utilisation in other valleys ranges from about 60% in the Gwydir to 93% in the Murrumbidgee.

238 WaterNSW states that there have been declining customer numbers and average water sales in these valleys. WaterNSW, *Pricing Proposal to IPART for Rural Bulk Water Services*, June 2016, p 30. Analysis of historical extraction data from 2004-05 to 2015-16 indicates that extractions have reduced by 46% in the North Coast and 66% in the South Coast. Forecast usage volumes (based on the 20-year rolling average, have reduced between the previous determination period and the 2017 Determination by 32% for the North Coast and 35% for the South Coast.

**Box 12.1 Stakeholders call for further investigation into options for valleys below FCR**

In their submissions to our Issues Paper, water users groups in the North Coast and South Coast valleys provided submissions which focused on high prices in these valleys.

Bega Valley Water Users' Association, Bega Valley Shire Council and Bega RSL Club Limited highlighted that customers will be priced out of the market before FCR occurs, thereby increasing the cost burden on remaining customers.

NSW Irrigators' Council requested IPART freeze current prices and conduct a separate review for NSW Coastal valleys on the preliminary options outlined in the Issues Paper. WaterNSW noted that any price freeze will result in an increase in Government's customer service obligation.

Submissions also highlighted a WaterNSW pilot study currently underway in the North Coast (and proposed study in the South Coast) valley looking at long-term options for customers. The study plans to take into account a broad range of factors including:

- the future regional economic development needs of the North Coast;
- tariff and pricing structure changes;
- policy changes; and
- opportunities to leverage off other water utility and local government water strategies to achieve a more coherent and integrated approach to water management.

Richmond and Wilson Combined Water Users Association and Toonumbar Water Users' Group stated that the primary principles considered in price determinations should be:

- affordability
- community benefit
- water availability, and
- the future value of water storage.

**Source:** Bega Valley Water Users' Association Incorporated submission to IPART Issues Paper, October 2016, pp 2, 4, 6 and 8; Richmond and Wilson Combined Water Users Association submission to IPART Issues Paper, October 2016, pp 1, 3 and 6; Toonumbar Water Users Group submission to IPART Issues Paper, October 2016, pp 2 and 3, and pp 6 to 8; Bega Valley Shire Council submission to IPART Issues Paper, October 2016, p 1; Bega RSL Club Limited submission to IPART Issues Paper, October 2016, p 1; NSW Irrigators' Council submission to IPART Issues Paper, October 2016, p 42 and WaterNSW submission to IPART Issues Paper, October 2016, p 17, 19 and 20.

### We have investigated options for pricing in valleys below FCR

We have considered a number of broad approaches for establishing a long-term pricing strategy for valleys (such as the North Coast and South Coast valley) which are well below FCR, including:

- continuing the transition to FCR, but capping annual real price increases (at 10%, for example)
- freezing prices at a point in time
- reassessing the efficient or optimal cost base in these valleys given prevailing market conditions (including entitlement volumes and customer numbers)
- introducing consideration of capacity to pay
- setting prices that only recover operating costs

- setting lower-bound prices (ie, that exclude a return on assets).

In 2016, we engaged consultants (Aither Pty Ltd) to undertake a review to establish key principles for setting prices in valleys where FCR is unattainable. We asked Aither to develop:

- a set of economic principles to guide us in setting prices, and
- a set of criteria against which price-setting options could be assessed.

### New approach: Efficient pricing band for valleys below FCR to provide more certainty

Aither's Final Report to IPART recommends, as a key pricing principle for valleys below FCR, that prices be set:

- To align with those that would prevail in a reasonably competitive market.
- Within the efficient pricing band such that the overall revenue that WaterNSW recovers from a customer lies between:
  - the lesser of customer's capacity to pay[239] for WaterNSW's services and the stand alone cost (**upper limit**), and
  - the cost that WaterNSW would avoid if it did not have to supply those services to that customer (**lower limit**) (which in most cases would be close to zero).

Thus, the lesser of capacity to pay and stand alone cost becomes the critical determinant, placing an upper limit on the prices that WaterNSW can charge going forward.[240]

We support, using this key principle to set prices for WaterNSW's rural bulk water services in valleys well below FCR.

Applying this approach, ie, determining an efficient pricing band with an **upper limit based on capacity to pay rather than FCR prices**, should provide price stability and certainty for customers.[241] This should provide customers with greater confidence when making longer-term investment decisions. It also provides a clear signal to WaterNSW and the NSW Government that transitioning to FCR in these valleys is unattainable and that they need to assess long-term options and viability in these valleys, particularly in the North Coast.

In both our 2006 and 2010 determinations we stated that the then State Water should consult with the NSW Government to assess the long-term viability of valleys that are below FCR, and to consider how to fund services in those valleys. Our 2010 Determination stated:

> … State Water and the Government should assess the long-term viability of these valleys that are below full cost recovery. In the interim, the NSW Government will need to fund the revenue shortfall as it has done for the 2006 Determination.[242]

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239 Aither suggest 'willingness to pay' as the upper limit, however we have opted to instead refer to 'capacity to pay' in recognition of the fact that our approach has regard to the production function of water users (ie, how the level of output varies as the quantity of inputs vary) rather than their preferences. We define a customer's capacity to pay as the dollar amount above which that customer would not purchase water.

240 Aither Pty Ltd, *WaterNSW Prices for Rural Bulk Water Services – Cost recovery scoping study*, November 2016, pp 26-27.

241 Ie, prices will no longer be transitioned towards FCR in these valleys (ie, the North Coast and South Coast valleys), and will instead be set within the efficient pricing band.

242 IPART, *Review of bulk water charges for State Water Corporation, From 1 July 2010 to 30 June 2014 – Final Report*, June 2010, p150.

### We have set prices in valleys below FCR within the efficient pricing band

We have decided to set prices in valleys below FCR using a new approach (ie, pricing within the efficient pricing band). This approach considers WaterNSW's customers' capacity to pay in these valleys and WaterNSW's avoided costs, rather than continuing to transition towards FCR.

#### Determining the upper limit (capacity to pay) of the efficient pricing band

In 2016, we engaged consultants (Agripath Pty Ltd) to investigate willingness (or capacity) to pay for rural bulk water services in the North Coast and South Coast valleys. This study aimed to assess customers' estimated capacity to pay for bulk water in the dairy industry by comparing the cost of irrigation pasture production (to which water costs are a substantial input) to the cost of dry matter bought-in feed (a substitute for pasture) in valleys that are below FCR.

We have estimated the upper limit of the efficient pricing band using Agripath's estimates of the cost of irrigation pasture production and the cost of dry matter bought-in feed in the North Coast and South Coast valleys.

We have estimated the bulk water prices at which the cost of irrigation pasture production would be equal to the cost of bought-in feed as a proxy for the prices at which a customer's estimated capacity to pay for bulk water would be reached. These prices represent the upper limit of the efficient pricing band.

These price estimates are based on the costs that a reasonably efficient farm, with an efficient irrigation system, would face. This includes assuming that the farm has a:

- Water Use Efficiency of 1t dry matter being grown from 1ML of water (1tDM/ML), and
- 67.5% pasture utilisation, and
- 10% wastage for bought-in feed.

The cost of bought-in feed has been estimated based on the average cost for the 3 types of feed that are considered to be more cost-efficient substitutes for home grown-feed (Ryegrass – Hay, Ryegrass – Silage and Maize – Silage).

We note that, in reality, individual farmers would have their own capacity to pay threshold depending on their production system.[243]

#### Determining the lower limit (avoided cost) of the efficient pricing band

We have estimated the lower limit of the efficient pricing band as 1% of WaterNSW's total cost of supplying bulk water services. This reflects the high fixed cost nature of

[243] Other assumptions made in developing these estimates include that water usage is assumed at 100% of allocation. Electricity used in irrigation is assumed at 560kW/ML, capital expenditure is assumed at $60,000, and labour used in irrigation is assumed at $20/ML. Freight costs and costs related to feeding out have not been included. Depreciation assumptions have also been made and other costs associated with irrigating or bought-in feed are assumed to be constant.

WaterNSW's rural bulk water services business, and thus the low avoided cost of supplying an additional customer.[244]

### Setting prices within the efficient pricing band for 2017 Determination

The efficient pricing band represents the range within which prices should be set for valleys below FCR. Judgement has been required to determine whether to set prices at the lower end of the efficient price band (ie, towards avoided cost) or the higher end (ie, towards capacity to pay).

Given that there has already been some decline in customer numbers and average water sales in the North Coast and South Coast valleys, we consider that the mid-point of the efficient pricing band, which is close to where current prices lie, is an appropriate starting point for the 2017 Determination.[245] Setting prices at (or close to) this point in the short-term, rather than setting prices closer to the upper limit, may help to stimulate demand and confidence.[246]

We also recognise that the upper (in particular) and lower limit estimates are likely to require refinement over the medium-term. In the medium to long-term, it may be more appropriate to set prices closer to the upper limit of the efficient pricing band to strengthen price signals to customers.

We have decided to set prices for the 2017 Determination for the:

- **North Coast** – slightly below the smoothed mid-point of the efficient pricing band (weighted based on forecast volume of entitlements), by freezing prices at the current 2016-17 price level in real terms over the 2017 determination period.

  This recognises that an increase in prices in the North Coast would likely reduce demand, reducing revenue and therefore leaving a larger gap between operating costs and revenues, as the North Coast has:

  - particularly low customer numbers and average annual water usage (forecast usage in the North Coast is only 15% of usage in the South Coast) and there is evidence of demand reducing over time as prices have increased.
  - substantially lower levels of cost recovery (currently 12% in the North Coast compared to 42% in the South Coast), with current prices recovering only about 20% of operating costs, compared to the South Coast which recovers about 71% of operating costs.

- **South Coast** – at the smoothed mid-point of the efficient pricing band (weighted based on forecast volume of entitlements).

### Future price determinations

For future price determinations the upper and lower limit estimates for the efficient pricing band should be refined, and prices should be set within this refined range.

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244 Variable operating costs represent less than 1% of costs (excluding Fish River). Deloitte, *Expenditure forecast review State Water Corporation – Final Report*, December 2013, p 20.

245 The mid-point has been determined as a weighted mid-point based on forecast volume of entitlements.

246 Water Services Association of Australia, *Pricing for Recycled Water – Occasional Paper No. 12*, February 2005, p 40.

Prior to the 2021 Determination:

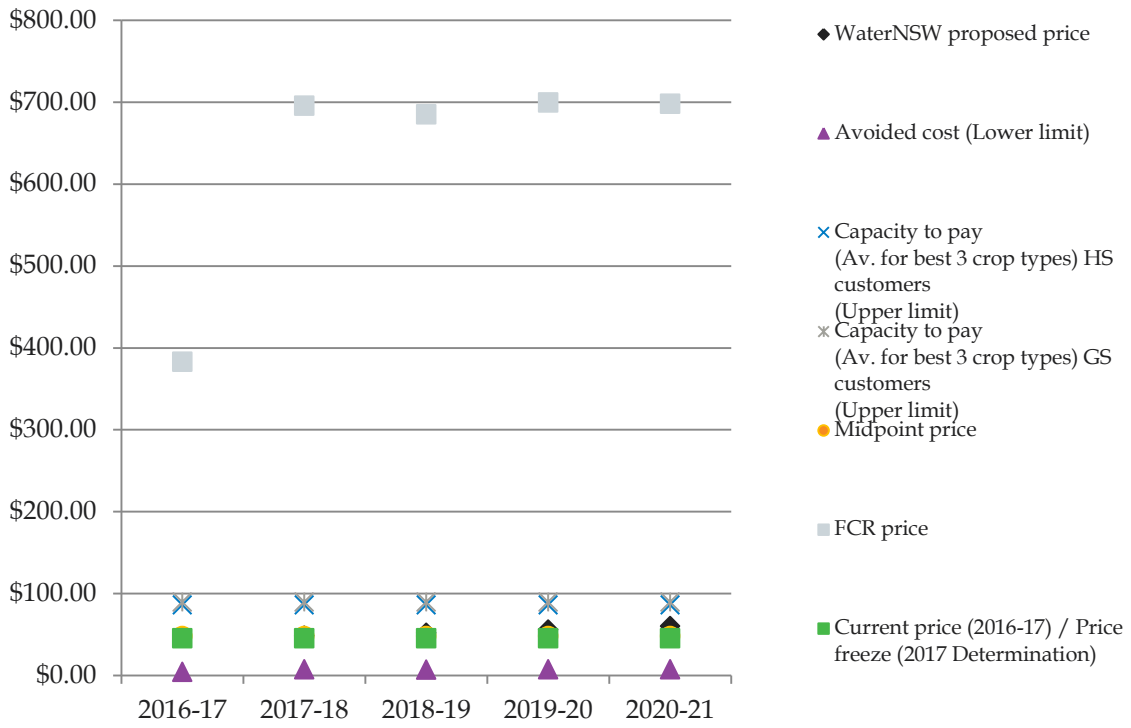
- We plan to undertake further investigation and analysis to improve the accuracy and reliability of the inputs to the capacity to pay estimates, eg, via additional studies and/or monitoring the demand response.
- WaterNSW/NSW Government should undertake:
  - further investigation and analysis to improve the accuracy and reliability of the avoided costs, eg, via a targeted level of service study and/or engineering-based cost assessment.
  - a full structural review of demand and supply (levels of service study) for the North Coast and South Coast valleys.

### 12.4.2 Draft prices for North Coast and South Coast valleys

#### North Coast draft prices lower than WaterNSW's proposed prices

Table 12.11 presents our draft prices for the North Coast valley. The efficient pricing band for this valley is shown for usage charges in Figure 12.1.

**Figure 12.1 FCR prices and efficient pricing band estimates for North Coast ($/ML, $2016-17) – usage charges**




**Data source:** Agripath Pty Ltd, *Willingness to Pay Scoping Study*, January 2017; IPART analysis.

**Table 12.11 Draft prices for the North Coast for the 2017 determination period ($/ML, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| Usage charge | 45.04 | 45.04 | 45.04 | 45.04 | 45.04 | 0.0% |
| HS entitlement charge | 9.54 | 9.54 | 9.54 | 9.54 | 9.54 | 0.0% |
| GS entitlement charge | 7.25 | 7.25 | 7.25 | 7.25 | 7.25 | 0.0% |

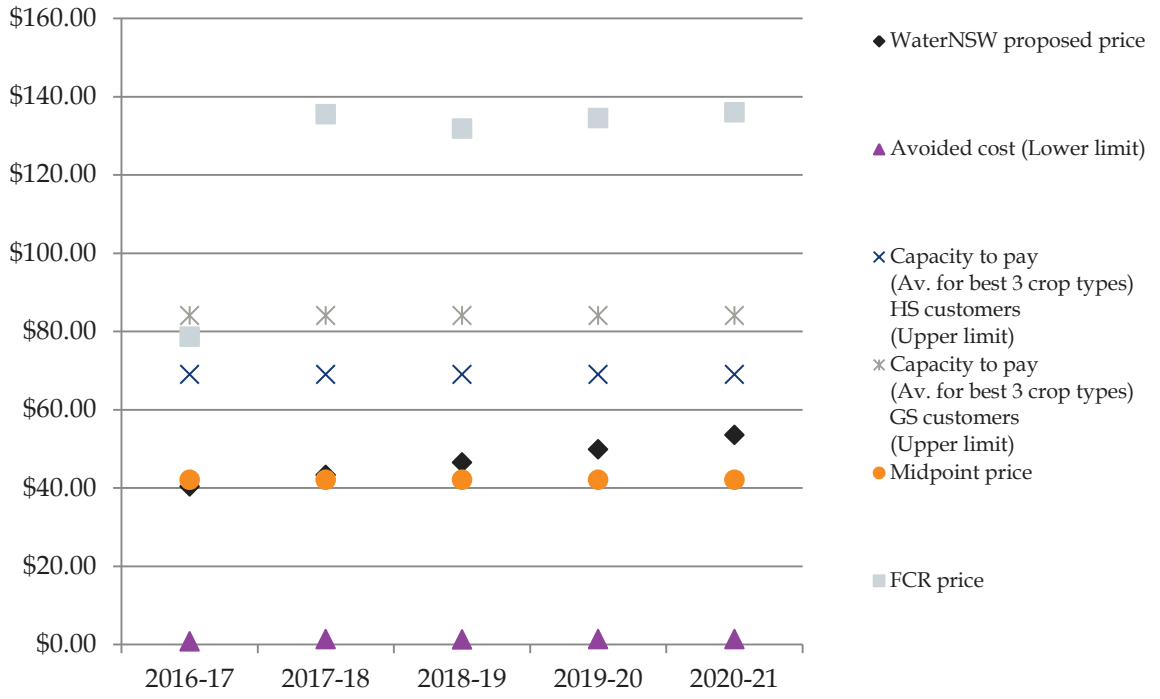
**Source:** IPART analysis.

Our draft prices for the North Coast are lower than WaterNSW's proposed prices across the 2017 determination period (6.8% lower in 2017-18; up to 24.6% lower in 2020-21).

### South Coast draft prices lower than WaterNSW's proposed prices

Table 12.12 presents our draft prices for the South Coast valley based on the mid-point of the efficient pricing band for this valley (shown for usage charges in Figure 12.2).

**Figure 12.2 FCR prices and efficient pricing band estimates for South Coast ($/ML, $2016-17) – usage charges**




**Data source:** Agripath Pty Ltd, *Willingness to Pay Scoping Study*, January 2017; IPART analysis.

**Table 12.12 Draft prices for the South Coast for the 2017 determination period ($/ML, $2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change |
|---|---|---|---|---|---|---|
| Usage charge | 40.38 | 42.08 | 42.08 | 42.08 | 42.08 | 4.2% |
| HS entitlement charge | 21.12 | 18.26 | 18.26 | 18.26 | 18.26 | -13.6% |
| GS entitlement charge | 10.09 | 10.61 | 10.61 | 10.61 | 10.61 | 5.1% |

**Source:** IPART analysis.

Our draft prices for the South Coast are also lower than WaterNSW's proposed prices across the 2017 determination period (2.9% lower for usage charges, 2.0% lower for general security entitlement charges and 19.5% lower for high security entitlement charges in 2017-18; up to 21.4% lower for usage charges, 20.7% lower for general security entitlement charges and 34.8% lower for high security entitlement charges in 2020-21). Our high security entitlement draft prices are also lower than WaterNSW's current prices (by 13.6%).

However, our general security entitlement draft prices are higher than WaterNSW's current prices by 5.1% and usage charges are higher by 4.2%.

### Fixed component of tariff structure increases for North Coast and South Coast

Setting draft prices within the efficient pricing band for the 2017 Determination also results in changes to the tariff structure as presented in Table 12.13. For both the North Coast and South Coast valleys, the fixed component of the fixed to variable revenue split increases, and the variable component decreases. The change in tariff structure better reflects WaterNSW's cost structure.

**Table 12.13 Changes to tariff structure for North and South Coast for 2017 Determination**

| | Current - target (2016-17) | Current - actual (2016-17) | WaterNSW proposed prices | Draft prices |
|---|---|---|---|---|
| **North Coast** | | | | |
| Revenue recovered from usage (variable) charges | 40% | 35% | 26% | 26% |
| Revenue recovered from entitlement (fixed) charges | 60% | 65% | 74% | 74% |
| **South Coast** | | | | |
| Revenue recovered from usage (variable) charges | 60% | 59% | 48% | 49% |
| Revenue recovered from entitlement (fixed) charges | 40% | 41% | 52% | 51% |

**Source:** WaterNSW pricing proposal to IPART, June 2016; IPART analysis.

## 12.4.3 Cost recovery and prices in the Peel valley

Prices in the Peel valley have previously not recovered costs (ie, prices have been set at levels below FCR). In its 2014 Decision, the ACCC capped price increases in the Peel valley at 10% per year.[247] The Peel valley is now at FCR, achieved in 2016-17.

As such, we have not specifically applied our approach for setting prices in valleys below FCR to determine draft prices for the Peel valley. For the 2017 Determination we will continue to set prices for the Peel valley to recover the customers' share of WaterNSW's efficient costs, given Peel valley is now at FCR. For the 2017 Determination, WaterNSW has proposed a reduction in prices in the Peel valley in 2017-18, in line with lower proposed costs. Our draft prices for the Peel valley are lower than those proposed by WaterNSW.[248]

The Peel Valley Water Users Association Incorporated provided a submission to our Issues Paper which focused on current high prices paid by customers in the Peel valley, commenting that prices are unfair, inequitable and anti-competitive compared to those paid by customers in other MDB valleys.[249]

247 ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, p 23.

248 Per year, our charges are lower than WaterNSW's proposed charges by $0.65/ML of entitlement for high security entitlement charges, $2.04/ML of entitlement for general security entitlement charges, and $2.60/ML for usage charges. IPART analysis.

249 Peel Valley Water Users Association submission to IPART Issues Paper, October 2016, p 2.

At FCR, prices in the Peel valley are higher than other MDB valleys. However, as the Peel valley is at FCR (ie, it is attainable), a move away from FCR would be inconsistent with the National Water Initiative and would not adequately recover the costs it incurs in providing bulk water services. A move away from valley-based pricing would also be inappropriate. We set prices at a valley level to ensure that water customers face the full customer share of efficient cost in the delivery of bulk water services in each valley. This in turn, ensures the efficient use of water infrastructure and resources.

Whilst we recognise prices in the Peel valley are comparatively high[250], they are cost-reflective. Despite gradual increases in bills over the past three determination periods to reach FCR, licence numbers and entitlement volumes have remained stable and there has been no observable downward trend in water usage in the Peel valley. This indicates that at cost reflective prices, the total benefit of bulk water services is greater than or equal to the total charges paid in the Peel valley.

Given an absence of evidence indicating that prices are demonstrably above customers' capacity to pay, we consider that the current and draft prices are likely to be within the efficient pricing band in any case. We consider that our building block approach establishes the customer share of the efficient cost of delivering bulk water services in the Peel valley.

Our response to stakeholder comments on prices in the Peel valley is discussed further in Appendix D.

## 12.5 Yanco Creek levy

The Yanco Creek natural resources management levy (Yanco Creek levy) was first approved by IPART in its 2005 Determination, and continued through its 2006 and 2010 determinations of State Water's prices.[251] The Yanco Creek levy was also approved as part of the ACCC's 2014 Decision, on the basis that it was endorsed by Yanco Creek customers and there is no change (in nominal terms) to the level of the charge.

The levy applies to customers in the Yanco Creek system, and is intended to fund the rehabilitation of the Yanco Columbo system, to improve flows and provide significant water efficiencies for the system and the Murrumbidgee valley. The Yanco Creek and Tributaries Advisory Council (YACTAC) has advised IPART that there is a new five-year work program. The work programs include a mixture of physical works (eg, willow extractions and aquatic and riparian weed removal and maintenance), program reviews, and monitoring and management of projects.

The levy has not been included in the calculation of WaterNSW's NRR.

250 This is as a result of the Peel valley's customer base, which target revenue is recovered from, being relatively small. Within the MDB valleys, Peel has the lowest volume of entitlements (high security and general security) and the lowest water usage.

251 IPART, *State Water Corporation and Water Administration Ministerial Corporation, Bulk Water Prices Determination: for 2005/06*, August 2005, p 23; IPART, *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation: from 1 October 2006 to 30 June 2010*, September 2006, pp 142-143; IPART, *Review of bulk water charges for State Water Corporation: From 1 July 2010 to 30 June 2014*, June 2010, p 158.

We made a draft decision:

43 To set a maximum per annum Yanco Creek levy of $0.90 per ML ($ nominal) for users in the Yanco Columbo system.

### 12.5.1 Reasons for our draft decision

Our decision to maintain the Yanco Creek levy is on the basis that:

- the levy was approved in the ACCC's 2014 Decision under the *Water Charge (Infrastructure) Rules 2010,*
- YACTAC 2014-15 and 2015-16 financial reports have been audited by an independent auditor in accordance with the Australian Auditing Standards,
- there are no submissions opposing the levy in response to our Issues Paper or at the Public Hearings,
- the levy has decreased in real terms from the originally proposed levy ($1.16/ML to $0.90/ML ($2016-17)), and
- the total cost of the proposed work program for the next five years is similar to the work program established at the 2005 Determination.

We note that we initially had concerns regarding the YACTAC's governance. However, YACTAC has been cooperative in answering our queries and has provided its constitution and audited financial reports to support its proposal. Moreover, it has indicated that it aims to improve its governance and due diligence.

It is important to note that if this type of levy is proposed in the 2020-21 WaterNSW price submission, we will review this type of levy under the *IPART Act 1992.*

# 13 Miscellaneous charges and ICD discounts

WaterNSW owns and operates around 2,000 meters (telemetered and non-telemetered), which were funded by the Commonwealth Government under the NSW Metering Project. These meters were installed in the Murray and Murrumbidgee valleys.[252]

In the 2010 Determination, we decided to introduce a meter service charge (MSC), which applied to new meters installed under the NSW Metering Project. MSCs are levied to customers with WaterNSW-owned meters on regulated rivers. The current MSCs cover the cost of operating, maintaining and reading the WaterNSW-owned meters, as well as the provision, maintenance and operation of information systems to process water meter data.[253]

For the 2017 Determination, WaterNSW proposed to continue levying a MSC on customers who extract water through a WaterNSW-owned meter. The charge will recover the costs associated with its maintenance and administration (including overheads).[254]

WaterNSW has also stated that it intends to restructure its approach to meter reading over the determination period.[255] This is discussed further below.

WaterNSW also proposed a number of miscellaneous charges for which we have determined draft prices. These miscellaneous charges include:

- water trading charges
- an environmental gauging station charge
- a refundable meter accuracy deposit
- a meter accuracy testing charge for meters that are tested and found to be accurate
- a Fish River connection fee, and
- a Fish River disconnection fee.

The environmental gauging station charge is an annual charge, whereas the other charges are fee for service.

Our draft decisions on meter service charges and other miscellaneous charges are discussed below.

## 13.1 Meter service charges

MSCs recover the costs associated with maintenance and administration (including overheads) of about 2,000 Commonwealth-funded (but **WaterNSW-owned**) meters installed

252 WaterNSW pricing proposal to IPART, June 2016, p 110.
253 ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, p 24.
254 WaterNSW pricing proposal to IPART, June 2016, p 110.
255 WaterNSW pricing proposal to IPART, June 2016, p 112.

in the Murray and Murrumbidgee valleys on customer licensed water extraction sites, under the NSW Metering Project. The MSC does not cover the maintenance costs of **customer-owned meters**, which are paid for by customers themselves.

Under the ACCC's 2014 Decision, MSCs were set according to meter size, whether the meter is telemetered or non-telemetered, and whether the meter was funded by the Commonwealth or WaterNSW. The ACCC MSC also included an allowance to fund meter and telemetry asset failures outside of warranty.[256]

We made a draft decision:

44 To set draft prices for meter service charges as listed in Table 13.1.

**Table 13.1 IPART's draft decision on MSCs (telemetry and non-telemetry) ($2016-17)**

| Meter Size | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change (2016-17 to 2020-21) |
|---|---|---|---|---|---|---|
| 50mm | 398.65 | 432.33 | 432.33 | 432.33 | 432.33 | 8.4% |
| 80mm | 398.79 | 434.33 | 434.33 | 434.33 | 434.33 | 8.9% |
| 100mm | 399.55 | 434.32 | 434.32 | 434.32 | 434.32 | 8.7% |
| 150mm | 420.27 | 439.43 | 439.43 | 439.43 | 439.43 | 4.6% |
| 200mm | 442.79 | 441.95 | 441.95 | 441.95 | 441.95 | -0.2% |
| 250mm | 448.46 | 444.29 | 444.29 | 444.29 | 444.29 | -0.9% |
| 300mm | 450.46 | 450.33 | 450.33 | 450.33 | 450.33 | 0.0% |
| 350mm | 463.04 | 477.46 | 477.46 | 477.46 | 477.46 | 3.1% |
| 400mm | 515.41 | 493.61 | 493.61 | 493.61 | 493.61 | -4.2% |
| 450mm | 623.99 | 496.72 | 496.72 | 496.72 | 496.72 | -20.4% |
| 500mm | 633.40 | 509.95 | 509.95 | 509.95 | 509.95 | -19.5% |
| 600mm | 667.59 | 526.90 | 526.90 | 526.90 | 526.90 | -21.1% |
| 700mm | 681.27 | 547.05 | 547.05 | 547.05 | 547.05 | -19.7% |
| 750mm | 682.95 | 575.26 | 575.26 | 575.26 | 575.26 | -15.8% |
| 800mm | 720.82 | 594.33 | 594.33 | 594.33 | 594.33 | -17.5% |
| 900mm | 775.11 | 600.36 | 600.36 | 600.36 | 600.36 | -22.5% |
| 1,000mm | 780.59 | 611.53 | 611.53 | 611.53 | 611.53 | -21.7% |
| Channel | 7,637.95 | 5,666.00 | 5,666.00 | 5,666.00 | 5,666.00 | -25.8% |

**Note:** MSCs to be indexed by CPI for each year of the determination period.

**Source:** IPART analysis; Aither, *WaterNSW rural bulk water services expenditure review- Final Report*, December 2016, p 129, adjusted from nominal to real dollars.

MSCs for the 2017 Determination, including MSCs for 2020-21 as presented in Table 13.1, have been set to be cost-reflective. They are based on the current third-party contract between WaterNSW and the service provider for meter maintenance services, which is due to end in mid-2020.

256 WaterNSW pricing proposal to IPART, June 2016, pp 110-111.

### Reasons for our draft decision

WaterNSW has proposed:

- the same level of charging for both telemetered and non-telemetered meters, with differential pricing by meter size for administrative simplicity given that:
  - the large majority of meters are currently telemetered
  - there is only about a 2% to 4% difference in MSCs between the two meter types
- MSCs for Commonwealth-funded meters only, as no WaterNSW-funded meters have been installed at customer sites
- to retain the allowance to fund asset failures for the 2017 Determination
- an increase in most MSCs, up to 35% higher than current MSCs by 2020-21, including a large increase between 2019-20 and 2020-21 (Table 13.2).

**Table 13.2 WaterNSW's current and proposed MSCs (telemetry and non-telemetry) ($2016-17)**

| Meter Size | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | % Change (2016-17 to 2020-21) |
|---|---|---|---|---|---|---|
| 50mm | 398.65 | 429.29 | 449.19 | 469.09 | 528.71 | 32.6% |
| 80mm | 398.79 | 431.14 | 451.12 | 471.09 | 530.31 | 33.0% |
| 100mm | 399.55 | 429.98 | 450.38 | 470.77 | 534.06 | 33.7% |
| 150mm | 420.27 | 433.12 | 454.28 | 475.45 | 548.65 | 30.5% |
| 200mm | 442.79 | 434.73 | 456.25 | 477.76 | 560.12 | 26.5% |
| 250mm | 448.46 | 435.23 | 457.44 | 479.65 | 565.11 | 26.0% |
| 300mm | 450.46 | 438.37 | 461.70 | 485.02 | 574.97 | 27.6% |
| 350mm | 463.04 | 454.82 | 482.29 | 509.76 | 625.98 | 35.2% |
| 400mm | 515.41 | 462.70 | 493.34 | 523.97 | 657.98 | 27.7% |
| 450mm | 623.99 | 463.52 | 495.02 | 526.52 | 661.43 | 6.0% |
| 500mm | 633.40 | 472.19 | 505.48 | 538.76 | 668.58 | 5.6% |
| 600mm | 667.59 | 480.30 | 516.97 | 553.64 | 682.10 | 2.2% |
| 700mm | 681.27 | 491.69 | 531.74 | 571.78 | 695.63 | 2.1% |
| 750mm | 682.95 | 518.05 | 559.03 | 600.01 | 760.64 | 11.4% |
| 800mm | 720.82 | 523.27 | 569.48 | 615.69 | 781.54 | 8.4% |
| 900mm | 775.11 | 524.93 | 572.79 | 620.65 | 788.16 | 1.7% |
| 1,000mm | 780.59 | 527.99 | 578.91 | 629.83 | 800.39 | 2.5% |
| Channel | 7,637.95 | 5,674.46 | 5,737.92 | 5,801.39 | 6,051.33 | -20.8% |

**Note:** WaterNSW propose the charge increase by inflation for each year of the determination period.
**Source:** IPART analysis; WaterNSW pricing proposal to IPART, June 2016, p 108.

In its submission, NSWIC disagreed with the cost build-up and assumptions underlying WaterNSW's proposed MSCs, and considers the level of, and increase in, metering costs is unjustified.[257]

257 NSW Irrigators Council submission to IPART Issues Paper, October 2016, p 39.

Aither, our expenditure consultants, agreed with the rationale for applying the MSC. However, it found that WaterNSW's proposed charges should be adjusted to:

- Include a **revised asset failure rate of 0.32%** – The ACCC's 2014 Decision on MSCs included an allowance to fund meter and telemetry asset failures outside of warranty. This allowance was based on an estimated failure rate of 1% per year, to be adjusted in future price reviews to reflect actual failure rates.[258] For the 2017 Determination, Aither investigated the actual annual asset failure rate over the current regulatory period, which was found to be 0.32%.
- **Account for annualised telemetry costs once** – Aither found that the annualised telemetry cost had been incorporated twice in the calculation of the charge.[259]
- Include a **consistent annuity of meter replacement costs** – Aither found that the calculation of the annuity of meter replacement costs should be revised to ensure it was a consistent annuity cost is applied over the life of the asset.[260] This results in resulting in higher charges in the near-term and lower charges in the future.

These changes result in a small increase in MSCs compared to those proposed by WaterNSW for 2017-18 and, for some meter sizes, 2018-19. However, the revised replacement annuity results in lower MSCs for all meter sizes from 2019-20.[261]

We agree with Aither's findings. We also accept WaterNSW's proposal to have differential charging by meter size only, as the costs associated with this charge do not vary substantially between telemetered and non-telemetered meters.[262]

WaterNSW's current contract for meter maintenance services (with the third party service provider) runs from May 2015 to 30 June 2020. There is also an option to extend the contract for an additional five years (ie, from 1 July 2020 to 30 June 2025).[263] The comparatively large increase (up to 27%) in WaterNSW's proposed MSCs from 2019-20 to 2020-21 is due to an increase in maintenance costs being incorporated in the contract bid for the 2020 to 2025 contract extension.[264] We note that the contract costs for 2020-21 to 2024-25 were quoted up to ten years in advance. As such, we consider that the increase in 2020-21 included a premium for the uncertainty and risk associated with including costs to be incurred five (to 10) years in the future in the maintenance proposal.

We have decided that given the current low wage growth environment, the increase in MSCs proposed by WaterNSW between years three and four of the determination period results in prices that are too high, and that it would be appropriate and efficient to instead hold prices constant across the determination period. This results in a 10% reduction in expected revenue over the period compared to WaterNSW's proposed MSCs.

We consider that to ensure prices are prudent and efficient, WaterNSW should undertake a competitive procurement process prior to 2020 to test the market for the 2020-2025 contract.

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258 ACCC, *Attachments to ACCC Final Decision on State Water Pricing Application 2014-15 – 2016-17*, June 2014, p143.
259 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, p 128.
260 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, p 128.
261 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, p 128.
262 There is only about a 2% to 4% increase (depending on meter size) in MSCs for non-telemetered meters compared to telemetered meters (excludes channels). IPART analysis.
263 Personal communication with WaterNSW, 8 December 2016,
264 Depending on meter size, the increase is between 13% and 27% (excludes channels). IPART analysis.

## 13.2 Water reading and assessment charge

Currently, WaterNSW's meter reading and water use assessment costs are recovered through bulk water charges and are not subject to a separate charge. As raised in our Issues Paper, WaterNSW has flagged developing a new charging regime, but has noted this will take considerable analysis and customer consultation, and so propose to do this in preparation for the 2021 Determination.

We made a draft decision:

45 To maintain our current approach to recovering meter reading and water use assessment costs, ie, through bulk water charges as opposed to setting a separate charge.

### Reasons for our draft decision

WaterNSW intends to restructure its approach to meter reading over the 2017 determination period (Table 13.3).

- Historically, WaterNSW provided a uniform meter reading service of four meter reads per annum for all meters. Having reviewed this policy, it proposes to provide fewer readings for smaller meters. It considers this would save costs and target compliance towards areas with higher perceived risks.
- It also plans to investigate different options for recovering meter reading and water use assessment costs. It stated a fixed minimum charge for small customers and a separate charge for larger customers may be appropriate.

**Table 13.3 WaterNSW's proposed meter reading program**

| Meter size | Number of meter reads |
|---|---|
| Less than 100ML | Minimum 4 (customer self) reads per annum (no meter reads performed by WaterNSW). At least one compliance check annually. |
| 101ML to 500ML | Minimum of 2 meter reads performed by WaterNSW per annum |
| 501ML or greater | Minimum of 4 meter reads performed by WaterNSW per annum |

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 112.

Whilst some stakeholders are supportive of meter reading charges, for example, Tamworth Regional Council consider it would provide greater transparency, others are not supportive of immediate change.[265] NSWIC and OEH recommended that new charges should not be approved prior to the completion of DPI Water's *Water Take Measurement Strategy*.[266]

As such, we have decided to maintain the current pricing structure. We will consider WaterNSW's proposal at the next determination, including reviewing the forecast reduction in meter reading costs resulting from the foreshadowed change to the meter reading program.

265 Lachlan Valley Water submission to IPART Issues Paper, October 2016, p 13; Gwydir Valley Irrigators Association submission to IPART Issues Paper, October 2016, p 9; Tamworth Regional Council submission to IPART Issues Paper, October 2016, p 6.

266 NSWIC submission to IPART Issues Paper, October 2016, p 39; OEH submission to IPART Issues Paper, October 2016, p 3.

## 13.3 Trade processing charge

WaterNSW currently levies a trade processing charge as a two-part tariff consisting of a:

- fixed charge per trade application, and
- variable charge per ML of allocated trade.[267]

WaterNSW proposed to continue levying this charge at the current level (in real terms) over the 2017 Determination period.[268]

We made draft decisions:

46 To set the trade processing charge as listed in Table 13.4, as a single, fixed charge.

**Table 13.4 Draft decision for trade processing charge ($2016-17)**

| Charge | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| Trade processing charge per application | $50.36 | $47.58 | $47.35 | $45.84 |

**Source:** Aither, *WaterNSW rural bulk water services expenditure review – Final Report*, December 2016, p 135.

### Reasons for our draft decision

Whilst we agree with the rationale for the trade processing charge, we have decided to set the charge as a single, fixed charge applied to each application, rather than a two-part tariff as proposed by WaterNSW (Table 13.5). This is based on the recommendations of Aither, our consultant, as outlined below.

**Table 13.5 WaterNSW's current and proposed trade processing charge ($2016-17)**

| Charge | Current (2016-17) | Proposed (2017-18)[a] |
|---|---|---|
| Trade processing charge | $39.01 per application $0.51 per ML of allocation traded | $39.01 per application $0.51 per ML of allocation traded |

**a** WaterNSW propose the charge increase by inflation for each year of the determination period.

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 113.

Aither found that this would better reflect the costs incurred by WaterNSW, as there is a correlation between its costs and the number of applications it receives (yet there is no correlation between costs incurred and the volume of water attached to each trade application).[269]

In revising the trade application charge, Aither accepted WaterNSW's direct cost per hour and overhead percentages, and undertook further analysis of the number of trade applications to determine the number of hours required. Aither adjusted WaterNSW's

267 Up to a maximum of $154.56. WaterNSW pricing proposal to IPART, June 2016, p 113.
268 WaterNSW pricing proposal to IPART, June 2016, p 113.
269 Aither, *WaterNSW rural bulk water services expenditure review- Final Report*, December 2016, p 131.

forecast number of applications as it considered the forecast optimistic.[270] Aither also found that the charge should be reduced in real terms over the regulatory period to reflect expected reductions in overhead costs throughout the business.[271]

We agree with Aither's findings and have decided to set the trade processing charge as listed in Table 13.4, and to index the charges by CPI for each year of the determination period.

## 13.4 Environmental gauging station charge

WaterNSW currently levies an environmental gauging station charge per site, per year.

There are currently 21 environmental gauging stations operated by WaterNSW. Most of these were operated under a Service Level Agreement (SLA) with DPI Water, until recently being transferred to WaterNSW. These stations measure environmental releases for environmental customers. The environmental gauging station charge is levied on environmental customers. The charge is based on the incremental costs of upgrading the environmental gauging stations to achieve the level of accuracy required under the Commonwealth National Measurement Standards.[272]

We made a draft decision:

47 To set the environmental gauging station charge at $11,735 per year.

### Reasons for our draft decision

WaterNSW proposed to increase the charge significantly for 2017-18, arguing that the current charge is insufficient to recover the incremental costs of upgrading the stations to achieve the level of accuracy required under the Commonwealth National Measurement Standards. WaterNSW's proposed charge is presented in Table 13.6 and includes:

- a capital expenditure annuity for the instruments required to capture water flow information
- installation costs, and
- additional operational costs to maintain the gauging station at the required level of accuracy.

270 WaterNSW forecast 2,400 hours per annum would be required based on 1.5 FTEs. Using the average processing time (from 2012-13 to 2015-16) of 0.49 hours per trade, this equates to 4,904 trade applications per year. Aither estimated only 1,988 hours per annum, based on 4,063 trade applications per year, which it considered better reflected the longer term annual trend in trade applications. Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, pp 133-134.

271 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, p 134.

272 WaterNSW pricing proposal to IPART, June 2016, p 117-118.

**Table 13.6 WaterNSW's proposed environmental gauging station charge ($2016-17)**

| Charge | Current (2016-17) | Proposed (2017-18)[a] | Basis of charge |
|---|---|---|---|
| Environmental gauging station charge | $8,789.45 per year | $18,658 per year | Per site as end of life is reached |

**a** WaterNSW propose the charge increase by inflation for each year of the determination period.

**Source:** WaterNSW pricing proposal to IPART, June 2016, p 113.

Stakeholders who commented on the environmental gauging station charge in their submission to our Issues Paper had mixed views. Lachlan Valley Water Incorporated considers that the charge is reasonable.[273] However, the Office of Environment and Heritage (OEH) and the Commonwealth Environmental Water Office (CEWO) do not support the charge.[274]

The CEWO also considers that environmental gauging stations are used by all customers, not just environmental customers and that the charge potentially discriminates against environmental water holders, by shifting the cost of operating and maintaining these stations to environmental customers.[275]

Aither reviewed WaterNSW's proposed charge and recommended the following adjustments:

- excluding incremental costs for non-SLA sites
- increasing the estimated useful lives of instruments to six years as WaterNSW did not provide evidence to justify shorter useful lives[276], and
- incorporating a 'blended instrumentation annuity' based on the likely proportions of the two different types of instruments being installed.[277]

By making these adjustments to WaterNSW's proposed charges, Aither calculated an environmental gauging station charge of $11,735 ($2016-17) per year for 2017-18.

We agree with Aither's findings and have made our draft decision to set the environmental gauging station charge of $11,735 per year for 2017-18 ($2016-17), which is 37% lower than initially proposed by WaterNSW.

We will consider whether this charge should apply to all customers (and be incorporated into entitlement and/or usage charges) or only environmental customers as part of the broader review of customer cost shares prior to the 2021 Determination (see Chapter 9).

273 Lachlan Valley Water submission to IPART Issues Paper, October 2016, p 13.
274 OEH submission to IPART Issues Paper, October 2016, p 4; CEWO submission to IPART Issues Paper, October 2016, p 4.
275 CEWO submission to IPART Issues Paper, October 2016, p 5.
276 WaterNSW proposed that either an Acoustic Doppler Current Profiler (ADCP) or Transit Time instruments be installed at each site, in estimating its costs it has used expected useful lives of three years for the ADCP and four years for the Transit Time. Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, pp 136-137.
277 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, p 137.

## 13.5 Refundable meter accuracy deposit

WaterNSW currently levies a refundable deposit for meter accuracy testing for Water-NSW owned meters.[278] The deposit is returned to the customer if the meter is found to be inaccurate and forfeited by the customer if the meter is within accuracy standards.

We made a draft decision:

48 To set charges for meter accuracy testing as listed in Table 13.7.

**Table 13.7 Draft decision on charges for meter accuracy testing**

| Meter accuracy charges | Draft charge |
|---|---|
| Refundable meter accuracy deposit | $1,750[a] per request |
| Total charge where meter is found to be within accuracy standards | |
| Verification and testing in situ | $6,045[b] |
| Laboratory verification and testing | $8,177[b] |

[a] This charge is presented in $2016-17, and would not be indexed by CPI for each year of the determination period.
[b] This charge is presented in $2016-17, and would be indexed by CPI for each year of the determination period.
**Source:** IPART analysis.

### Reasons for our draft decision

For the 2017 Determination, WaterNSW proposed to separate the charge into two testing methods: in situ and laboratory tests (Table 13.8). WaterNSW also notes the current deposit significantly under-recovers the actual costs of these tests, which are:

- $6,045 for meter testing in situ; and
- $8,177 for meter testing in laboratory (estimated cost).

It therefore included in its proposal that:

> …if the meter is found to be within accuracy standards, the deposit will be forfeited by the customers, and WaterNSW may recover the outstanding costs from the customer of verifying the accuracy of the meter.[279]

278 WaterNSW pricing proposal to IPART, June 2016, p 118.
279 WaterNSW pricing proposal to IPART, June 2016, p 118.

**Table 13.8 WaterNSW's current and proposed refundable meter accuracy deposit charges ($2016-17)**

| Refundable meter accuracy deposit | Current (2016-17) | Proposed (2017-18)[a] | Basis of proposed charge |
|---|---|---|---|
| Verification and testing in situ | $1,710.26 per request | $3,000.00 per request | Corresponds to half the actual cost of conducting this test. |
| Laboratory verification and testing | na | $1,795.19 per request | Corresponds to IPART's equivalent charge in the 2016 WAMC determination |

[a] WaterNSW propose the charge increase by inflation for each year of the determination period.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 113, 118.

We have instead decided to introduce a two-part tariff:

- a relatively low deposit, which is returned if the meter is found to be inaccurate, and
- a cost-reflective charge if the meter is found to be accurate.

Our approach balances the need to avoid deterring customers from questioning the accuracy of the meter where they have a genuine concern about its accuracy, with the need to ensure WaterNSW is not significantly under-recovering costs for testing meters that are found to be within accuracy standards.

Under our approach, the refundable deposit is not intended to reflect costs. Rather, it aims to balance customer incentives to question the accuracy of their meter. As such, we determined a deposit roughly half way between the current deposit and the deposit WaterNSW proposes for laboratory testing. As the deposit does not reflect meter testing costs, we also consider there is no need to index the deposit by CPI over the determination period.

We consider it is appropriate for WaterNSW to recover its full testing costs where the meter is found to be within accuracy standards. We have accepted the total testing costs put forward by WaterNSW as:

- the costs reflect market rates, as WaterNSW contracts the testing out to private vendors
- Aither examined the breakdown of services provided and costs, and was satisfied with the associated process and costs
- Aither and WaterNSW have confirmed the costs are likely to only vary substantially by the type of test being performed (in situ or laboratory).[280]

## 13.6 Fish River connection and disconnection fees

In its proposal, WaterNSW stated that each new connection in the Fish River entails different requirements (location of tapping point and time taken to travel to location), which results in a variable cost of connection. WaterNSW also stated that the current charge does not cover the full cost of the connection services, and that it currently receives two to three requests for connection per annum.[281]

280 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, p 140-141.
281 WaterNSW pricing proposal to IPART, June 2016, pp 118-119.

We made a draft decision:

49 To set draft prices for the:

- Fish River Water Supply connection charge based on the complexity of the connection service, as listed in Table 13.9.
- Fish River Water Supply disconnection charge as listed in Table 13.10.

**Table 13.9 Draft decision on Fish River Water Supply connection charge ($2016-17)**

| Service type | Draft connection charge |
|---|---|
| Low complexity – no tapping band or pressure reducing valve required (PRV) | $850.67 |
| Medium complexity – tapping band required | $3,225.33 |
| High complexity – pressure reducing valve required | $6,594.40 |

**Note:** These charges would be indexed by CPI for each year of the determination period.
**Source:** WaterNSW Information Request; IPART analysis.

**Table 13.10 Draft decision on Fish River Water Supply disconnection charge ($2016-17)**

| Charge | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|
| Fish River disconnection charge | $263.06 | $248.55 | $247.35 | $239.48 |

**Note:** These charges would be indexed by CPI for each year of the determination period.
**Source:** Aither, *WaterNSW rural bulk water services expenditure review – Final Report*, December 2016, p 143.

## Reasons for our draft decision

WaterNSW proposed to provide individual quotes for each connection, using a bottom-up build-up of costs based on labour, material, equipment hire and travel time required.[282] For disconnections, WaterNSW proposed to continue to maintain the existing charges in real terms. It stated that the disconnection service is less complex than connection and involves removing the meter and turning the tap off.[283] WaterNSW's proposed changes are set out in Table 13.11 below.

**Table 13.11 WaterNSW's proposed change in Fish River Water Supply connection/ disconnection charges ($2016-17)**

| Charge | Current (2016-17) | Proposed (2017-18)[a] | Basis of charge |
|---|---|---|---|
| Fish River connection charge | $473.51 per request | Fee for service by quote | As agreed between the customer and WaterNSW |
| Fish River disconnection charge | $263.06 per request | $263.03 per request | Before the works are carried out as requested by the customer |

**a** WaterNSW propose the charge increase by inflation for each year of the determination period.
**Source:** WaterNSW pricing proposal to IPART, June 2016, p 113.

282 WaterNSW pricing proposal to IPART, June 2016, p 119.
283 WaterNSW pricing proposal to IPART, June 2016, p 119.

In reviewing the costs incurred by WaterNSW in providing connections, Aither agreed that the current connection charge under-recover costs.[284]

In considering whether to accept WaterNSW's connection charge proposal or determine a different charge, we have balanced the benefits of accurate cost-reflective pricing against administration costs and practicality, while also having regard to the ACCC pricing principles.[285]

We have decided to set three maximum charges reflecting each level of service complexity, as presented in Table 13.9. WaterNSW described three stages of connection.[286] We examined the cost break downs for 10 meter connections provided by WaterNSW and found that connection service costs varied substantially within these stages. However, costs were driven by the components of the service. Specifically, the most expensive components of the service are installation of a tapping band and pressure reducing valve. We have therefore set the maximum connection charges to reflect the average cost of the sampled connection costs where the service:

- does not involve installing a tapping band or pressure reducing valve (PRV)
- involves installing a tapping band (but no PRV), and
- involves installing a PRV (but no tapping band).

We consider this approach relatively simple, and that it balances the potential risks of WaterNSW under-recovering its costs and customers overpaying for the service.

We have accepted WaterNSW's proposed Fish River disconnection charge with an adjustment to reflect the expected reduction in overhead costs. Aither found the service is more straightforward and the charge reflects around 3.5 hours of labour which Aither considered reasonable. Aither recommended an adjustment to reflect the expected decline in WaterNSW's overhead costs of labour and then escalating the charge by inflation (as presented in Table 13.10).[287] We have accepted Aither's recommendation.

## 13.7 Credit card payment fee

WaterNSW proposed to introduce credit cards as a payment option.[288] However, by offering this payment channel to customers, WaterNSW states that it will incur credit card payment fees. WaterNSW has proposed to pass on to customers an amount in respect of these fees which is set by NSW Treasury based on the normal cost of merchant interchange fees. This is currently 0.44% for Visa/Mastercard and 1.54% for American Express cards. WaterNSW has proposed to vary the charges as NSW Treasury varies the charges.

According to WaterNSW, its proposal is in response to a direction from NSW Treasury (in May 2012) to NSW Government agencies and State Owned Corporations (SOCs) to recoup

284 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, p 142.
285 IPART is required to have regard to the ACCC's pricing principles under WCIR. The pricing principles state that charges should be clear to customers and promote pricing transparency. ACCC, *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010*, July 2011, p 51.
286 WaterNSW pricing proposal to IPART, June 2016, p 119.
287 Aither, *WaterNSW rural bulk water services expenditure review - Final Report*, December 2016, p 143.
288 IPART, *Review of prices for WaterNSW - Rural bulk water services from 1 July 2017 - Issues Paper*, September 2016, p 157.

their merchant interchange fees. Merchant interchange fees are incurred by SOCs and government agencies when they accept credit card payments from the public or customers.

The NSW Government requires recoupment of these fees through surcharging for payments accepted using debit or credit cards issued by card schemes such as Visa, MasterCard, American Express and Diners. This does not include payments accepted using ATM cards issued by banks and other deposit taking institutions.[289]

We made a draft decision:

50 Not to regulate WaterNSW's credit card payment fees.

### Reasons for our draft decision

We have decided not regulate the maximum amount of a credit card payment fee levied by WaterNSW, because:

- customers can avoid the fee by choosing a different payment method, and
- the fee is not charged for the provision of a monopoly service.[290]

Stakeholders have not expressed any concerns about the fee in our consultation to date, and our decision is consistent with our recent decision not to regulate Sydney Water's credit card payment fee.

## 13.8 Irrigation Corporations and Districts (ICD) discounts

Irrigation corporations and districts (ICDs), located in the Lachlan, Murray and Murrumbidgee valleys, undertake activities such as billing, metering and monitoring for customers that are serviced within their irrigation distribution network. The structure of ICDs and their activities means that WaterNSW services one large customer rather than many smaller customers.

Past determinations have included discounts via rebates to ICDs to reflect WaterNSW's 'avoided costs' of not having to directly service a larger number of smaller customers.[291] The avoided costs are calculated based on the services WaterNSW does not need to provide due to the activities of ICDs. These include billing, metering and compliance, telemetry installation and data transfer. The discounts have been paid annually to ICDs in the form of rebates, with the value of the rebates collected from other users. While the size of the rebate does not affect WaterNSW's total revenue requirement, it affects the value of bulk water charges paid by all customers.

289 NSW Treasury, *Treasury Circular*, 24 May 2012.

290 This means we cannot regulate the fee under section 11 of the IPART Act and would require a section 12A referral from the Premier to specify a maximum fee. A credit card payment fee also falls outside the definition of a 'regulated charge' under the WCIR.

291 Including IPART's 2006 Determination and 2010 Determinations, and the ACCC's 2014 Decision, for the former State Water Corporation. IPART, *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation: from 1 October 2006 to 30 June 2010,* September 2006, p 114; IPART, *Review of bulk water charges for State Water Corporation: From 1 July 2010 to 30 June 2014 – Final Report*, June 2010, p 138; ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, p 65.

We made a draft decision:

51 To set the value of rebates provided to eight irrigation corporations and districts (ICDs) as shown in Table 13.12.

**Table 13.12 Draft irrigation corporations and districts discounts compared to current ($2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|---|
| Jemalong | 63,032 | 44,836 | 42,702 | 42,669 | 41,936 |
| Murray Irrigation | 926,340 | 822,366 | 804,522 | 804,336 | 797,564 |
| Western Murray | 32,368 | 25,389 | 24,838 | 24,833 | 24,623 |
| West Corugan | 51,408 | 45,299 | 44,316 | 44,306 | 43,933 |
| Moira | 25,687 | 21,113 | 20,655 | 20,651 | 20,477 |
| Eagle Creek[a] | 9,060 | 34 | 33 | 33 | 33 |
| Murrumbidgee Irrigation | 649,655 | 484,688 | 474,956 | 474,854 | 471,166 |
| Coleambally Irrigation | 285,096 | 214,244 | 209,942 | 209,897 | 208,267 |
| Total discounts | 2,042,647 | 1,657,969 | 1,621,964 | 1,621,579 | 1,607,998 |

**a** The significant reduction for Eagle Creek reflects a large reduction in its entitlement holdings from 13,620 in 2013-14, to 60 in 2017-18.

**Source:** ACCC, *Final decision on State Water Pricing Application*, June 2014, p 65; IPART, *Review of prices for WaterNSW - Rural bulk water services from 1 July 2017 - Issues Paper,* September 2016, p 62; IPART analysis.

### 13.8.1 Reasons for our draft decision

WaterNSW proposed continuing to pay the ICD discounts on an annual basis, but reducing the value of the rebates between 2016-17 and 2017-18 by around 50% in total (see Table 13.13). WaterNSW reports that the reduction in its proposed ICD rebates is largely driven by a step change reduction in its metering, compliance and customer billing operational expenditure compared to the 2014 ACCC Decision.[292] WaterNSW reports that other contributing factors include:

- a reduction in the number of entitlements held by ICDs (particularly Eagle Creek), and
- a reduction in the proposed WACC, which has contributed to an overall reduction in telemetry installation avoided costs.

292 Personal communication with WaterNSW, 10 August 2016.

**Table 13.13 WaterNSW's proposed ICD discounts compared to current ($2016-17)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|---|
| Jemalong | 63,032 | 39,268 | 37,134 | 37,101 | 36,368 |
| Murray Irrigation | 926,340 | 553,805 | 535,961 | 535,776 | 529,003 |
| Western Murray | 32,368 | 17,098 | 16,547 | 16,541 | 16,332 |
| West Corugan | 51,408 | 30,506 | 29,523 | 29,512 | 29,139 |
| Moira | 25,687 | 14,218 | 13,760 | 13,756 | 13,582 |
| Eagle Creek[a] | 9,060 | 23 | 22 | 22 | 22 |
| Murrumbidgee Irrigation | 649,655 | 248,547 | 238,815 | 238,713 | 235,025 |
| Coleambally Irrigation | 285,096 | 109,864 | 105,562 | 105,517 | 103,887 |
| Total discounts | 2,042,647 | 1,013,328 | 977,323 | 976,938 | 963,358 |

**Source:** ACCC, *Final decision on State Water Pricing Application*, June 2014, p 65; IPART, *Review of prices for WaterNSW - Rural bulk water services from 1 July 2017 - Issues Paper*, September 2016, p 62; WaterNSW pricing proposal to IPART, June 2016, p 109.

Stakeholder submissions to our Issues Paper argued that WaterNSW had not provided evidence to substantiate such a large reduction in rebates and urged IPART to review WaterNSW's method of calculating the discount.[293]

We have reviewed WaterNSW's calculation of the discounts and found the overall method appears reasonable and generally reflective of its avoided costs. However, we have adjusted the customer numbers used in the calculation as outlined below.

WaterNSW has calculated its avoided costs relating to billing, metering and compliance based on the entitlements held by ICDs. This approach has been used historically and is consistent with WaterNSW's overall distribution of these operating costs, which is based on entitlement volumes. These avoided costs have reduced, reflecting that:

- most ICDs hold fewer entitlements than at the time of the ACCC's 2014 Decision, and
- WaterNSW's forecast operating expenditure on billing, metering and compliance is lower relative to the ACCC's 2014 Decision, the average reduction is 45% in Lachlan, 47% in Murray and 36% in Murrumbidgee.[294]

WaterNSW calculated its avoided costs for telemetry installation and data transfer, based on a proxy[295] for the number of customers that would require telemetry. We found that this contributed significantly to the reduction in costs proposed by WaterNSW as the proxy underestimated actual customer numbers.

In its 2014 Decision, the ACCC had used actual customer numbers reported by ICDs. Further, in seeking up to date information from ICDs, we found that customer sites[296] are a

293 These included submissions from ICDs, including Coleambally Irrigation and Murrumbidgee Irrigation, and other stakeholders such as NSWIC and Lachlan Valley Water. Coleambally Irrigation submission to IPART Issues Paper, October 2016, p 5; Murrumbidgee Irrigation submission to IPART Issues Paper, October 2016; p 1; NSWIC submission to IPART Issues Paper, October 2016, p 29; Lachlan Valley Water submission to IPART Issues Paper, October 2016, p 10.

294 We have accepted WaterNSW's proposals in relation to these operating expenditure activities, see Chapter 5.

295 The proxy was estimated by dividing the number of entitlements held by the ICD by the average number of entitlements per licence holder in the valley (excluding ICDs). WaterNSW Information Return, June 2016.

296 Customer sites are the 'outlets', 'wheels' or 'metering points' where customers extract water. Individual customers may have more than one outlet that would be metered separately.

more appropriate cost driver for telemetry installation and data transfer costs, rather than customer numbers, reflecting where WaterNSW would install telemetry if it serviced these individual customers.[297]

We have therefore recalculated these avoided costs based on customer sites.[298] This has resulted in a significant increase in discounts compared with WaterNSW's proposal. Particularly for Coleambally Irrigation and Murrumbidgee Irrigation, where WaterNSW's proxy for customer numbers significantly under-estimated the actual customer sites reported by these ICDs.

Under our draft decision ICD discounts are still declining relative to the ACCC's 2014 Decision. The total reduction between 2016-17 and 2017-18 is around 19% (compared with 50% under WaterNSW's proposal). This reflects that WaterNSW has gained broader efficiencies in its operating expenditure for billing, metering and compliance. We consider that a reduction in ICD discounts is appropriate to reflect that WaterNSW has made efficiency gains, which lower its avoided costs.

297 This was also confirmed by WaterNSW. Personal communication with WaterNSW, 19 January 2017.

298 Excluding customer sites that are stock and domestic only, as WaterNSW would not install telemetry at these sites. WaterNSW pricing proposal to IPART, June 2016.

# 14 Impacts on customer bills

This chapter outlines the impact of our pricing decisions on WaterNSW's customers. It also discusses the implications of our pricing decision on other matters we must consider under section 15 of the IPART Act (see Appendix A). These include:

- WaterNSW's financial viability
- WaterNSW's shareholders, and
- the environment.

We are satisfied that the 2017 Determination achieves an appropriate balance between these matters.

We note that in presenting customer bill impacts in this chapter, we present nominal dollar impacts – ie, **bill impacts including forecast inflation**. In calculating bill impacts for the 2017 Determination period, we apply an inflation rate of 2% per annum for the first year of the determination, and an inflation rate of 2.5% per annum for year two to year four of the determination period.

WaterNSW must apply for an annual review of its prices under the WCIR 2010 (refer to Appendix C). Bill impacts presented in this chapter are based on our draft prices and do not account for potential updates in prices following these annual reviews.

## 14.1 Customer bill impacts from WaterNSW's bulk water service charges

In reaching our decisions, we considered the likely impact on WaterNSW's high security and general security customers, assuming different patterns of usage and entitlement.

We note that in response to our Issues Paper, WaterNSW stated that it is in the process of developing an online bill calculator. This will allow individuals to determine the impact of prices set in determinations.

### 14.1.1 MDB and Coastal valleys

For the MDB and Coastal valleys, our analysis of bill impacts is based on:

- high security entitlement holders at 100% of usage, and
- general security entitlement holders at 60% of usage.[299]

[299] We note that Gwydir Valley Irrigators Association stated that bill impacts should also be presented at varying water usage (eg, 30% and 60%). However, WaterNSW has indicated that 60% water usage is representative of the average usage for GS entitlement holders over the past 20-years (approximately 57% of billable entitlements). Gwydir Valley Irrigators Association submission to IPART Issues Paper, October 2016, p 18; WaterNSW submission to IPART Issues Paper, October 2016, p 19.

For both high security and general security entitlements, customers are broken down into three categories:

- small customers with 100 ML of entitlements
- medium customers with 500 ML of entitlements, and
- large customers with 1,000 ML of entitlements.

For the Murray and Murrumbidgee valleys, we have included additional bill impacts (excluding MDBA pass-through charges) for customers with a WaterNSW owned meter. These bill impacts are based on:

- small customers (100 ML of entitlements) with a 100mm WaterNSW-owned meter
- medium customers (500 ML of entitlements) with a 250mm WaterNSW-owned meter
- large customers (1,000 ML of entitlements) with a 450mm WaterNSW-owned meter.

We note that customers with a WaterNSW-owned meter, compared to customers with a customer-owned meter, will have a larger bill due to the former incurring a meter service charge.

For the Lowbidgee valley, customers only own supplementary entitlements. Analysis of bills is based on the valley as a whole (ie, 747, 000 ML of entitlements and forecast usage at 57, 261 ML).

Figure 14.1 to Figure 14.4 below present the percentage change in bills from 2016-17 to 2020-21 on high security and general security customers in the MDB and Coastal valleys, compared to WaterNSW's proposed bill impacts. Table 14.1 to Table 14.14 set out the WaterNSW bulk water bill impacts in more detail based on customer size and entitlement type, by valley.

Our analysis of bill impacts indicate that from 2016-17 to 2020-21 ($nominal, ie, with inflation) for bulk water charges:

- **all high security customers would expect a bill decrease, or a small bill increase at or below the rate of inflation**, and
- **most general security customers would expect a bill decrease, or a small bill increase at or below the rate of inflation**.

This excludes the impact of BRC and MDBA charges, which are discussed further below.

General security customers that are facing an increase in bills above the rate of inflation, compared to their current 2016-17 bill are customers in the:

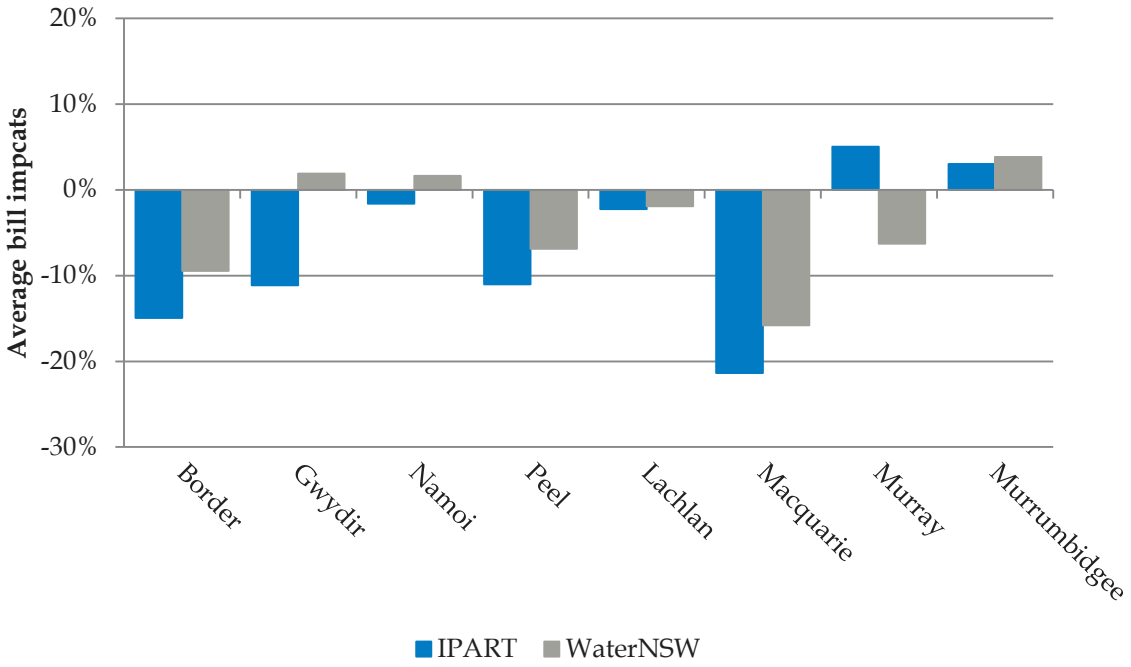
- **Gwydir valley,** which can be attributed to the combination of the volatility allowance ($0.24 per ML per year), the UOM balance payback ($0.92 per ML per year) and a decrease in the HS premium (from 4.07 to 3.19).
- **Namoi valley,** which can be attributed to the combination of the volatility allowance ($0.50 per ML per year) and the UOM balance payback ($2.07 per ML per year).
- **South Coast valley,** which can be attributed to a small increase in usage and general security entitlement charges following our pricing decision as discussed in section 12.4.

We note that, compared to WaterNSW's proposal, bills (in nominal terms) for:

- **High security customers in the Murray valley** would increase rather than the WaterNSW's proposed decrease. This is due to our decision to update the High Security (HS) premium, which results in a higher premium (see Chapter 11).
- **General security customers in the Gwydir and Namoi valley** would increase more than the WaterNSW's proposed bill increase. This can be attributed to the inclusion of the UOM payback allowance into our prices. Moreover, for general security customers in the Gwydir valley, the increase may also be driven by the smaller HS premium we applied (3.19) than the HS premium proposed by WaterNSW (4.13).[300]
- **General security customers in the Hunter valley** would increase rather than the WaterNSW's proposed decrease. This is due to the updated HS premium as discussed in Chapter 9. The HS premium we applied (1.29) is lower than the HS premium proposed by WaterNSW (3.09).[301] This means that under our prices, general security customers bear a greater proportion of the fixed component of WaterNSW's customer share of NRR.
- **Customers in the Macquarie valley** would have a larger decrease than WaterNSW's proposed decrease. This is can be attributed to our decision to use a comparatively lower volatility allowance in this valley than that proposed by WaterNSW.

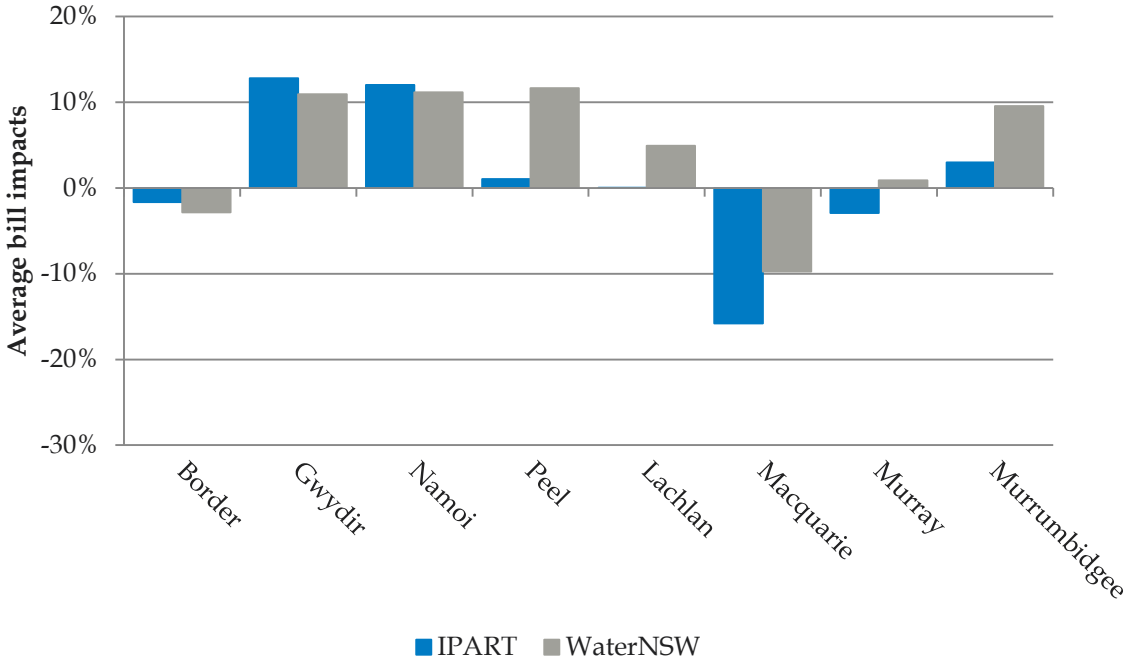
300 WaterNSW Information Return, June 2016.
301 WaterNSW Information Return, June 2016.

**Figure 14.1 IPART analysis of bill impacts for high security customers in MDB valleys compared to WaterNSW (% change from 2016-17 to 2020-21, $nominal)**



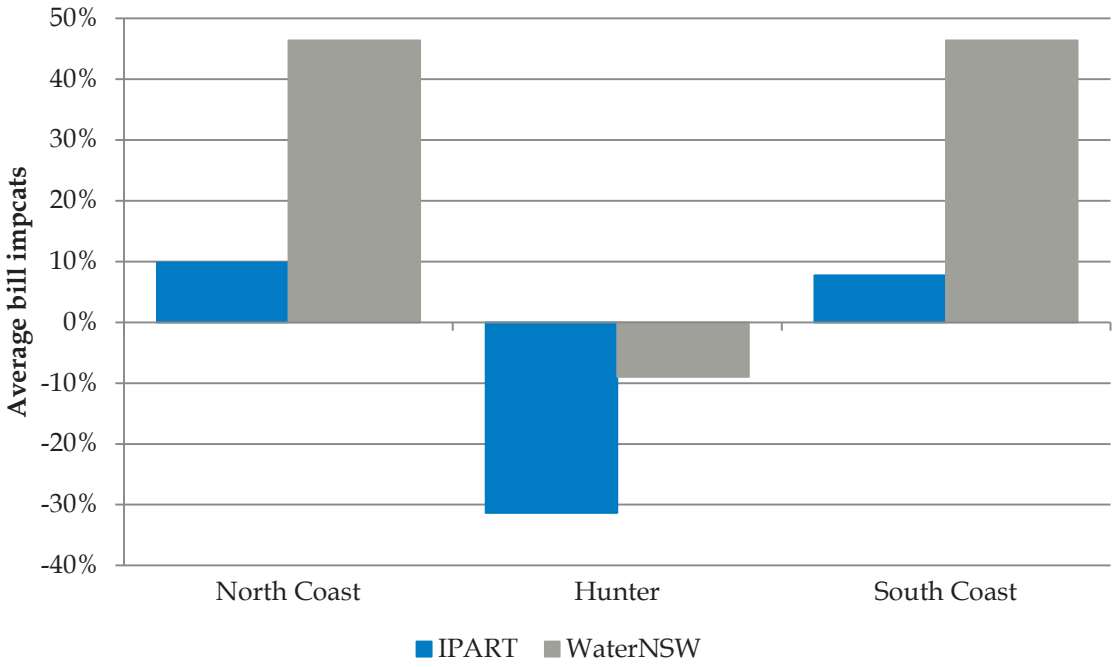

**Note:** Excludes BRC and MDBA costs. Lowbidgee is excluded as there are only supplementary entitlements in the valley.
**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Figure 14.2 IPART analysis of bill impacts for general security customers in MDB valleys compared to WaterNSW (% change from 2016-17 to 2020-21, $nominal)**



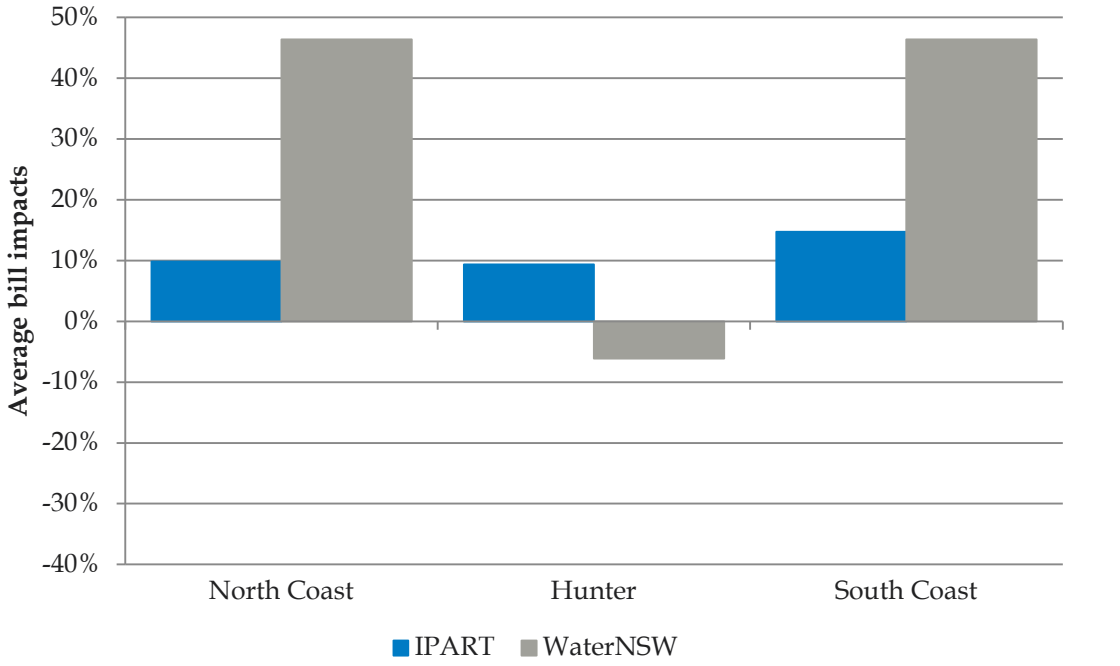

**Note:** Excludes BRC and MDBA costs. Lowbidgee is excluded as there are only supplementary entitlements in the valley.
**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Figure 14.3 IPART analysis of bill impacts for high security customers in Coastal valleys compared to WaterNSW (% change from 2016-17 to 2020-21, $nominal)**




**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Figure 14.4 IPART analysis of bill impacts for general security customers in Coastal valleys compared to WaterNSW (% change from 2016-17 to 2020-21, $nominal)**




**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

## Border valley

**Table 14.1 Border valley bill impacts compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $1,350 | $1,066 | $1,148 | -4.0% | -14.9% | -9.4% |
| Medium | $6,748 | $5,331 | $5,741 | -4.0% | -14.9% | -9.4% |
| Large | $13,495 | $10,662 | $11,481 | -4.0% | -14.9% | -9.4% |
| **General security** | | | | | | |
| Small | $639 | $579 | $628 | -0.4% | -1.7% | -2.8% |
| Medium | $3,193 | $2,894 | $3,140 | -0.4% | -1.7% | -2.8% |
| Large | $6,385 | $5,788 | $6,279 | -0.4% | -1.7% | -2.8% |

**Note:** Excludes BRC & MDBA pass-through charges.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

## Gwydir valley

**Table14.2 IPART analysis of Gwydir valley bill impacts compared to WaterNSW's proposal ($ nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $2,626 | $2,167 | $2,333 | -2.9% | -11.1% | 1.9% |
| Medium | $13,130 | $10,834 | $11,667 | -2.9% | -11.1% | 1.9% |
| Large | $26,259 | $21,667 | $23,333 | -2.9% | -11.1% | 1.9% |
| **General security** | | | | | | |
| Small | $1,075 | $1,119 | $1,213 | 3.1% | 12.8% | 10.9% |
| Medium | $5,376 | $5,595 | $6,064 | 3.1% | 12.8% | 10.9% |
| Large | $10,753 | $11,190 | $12,129 | 3.1% | 12.8% | 10.9% |

**Source:** WaterNSW Pricing WaterNSW's proposal, June 2016, pp49-58, and IPART analysis 2017.

## Namoi valley

**Table 14.3 IPART analysis of Namoi valley bill impacts compared to WaterNSW's proposal ($ nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $3,755 | $3,431 | $3,694 | -0.4% | -1.6% | 1.6% |
| Medium | $18,776 | $17,153 | $18,472 | -0.4% | -1.6% | 1.6% |
| Large | $37,551 | $34,307 | $36,945 | -0.4% | -1.6% | 1.6% |
| **General security** | | | | | | |
| Small | $2,041 | $2,107 | $2,286 | 2.9% | 12.0% | 11.1% |
| Medium | $10,203 | $10,533 | $11,430 | 2.9% | 12.0% | 11.1% |
| Large | $20,405 | $21,066 | $22,861 | 2.9% | 12.0% | 11.1% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

## Peel valley

**Table 14.4 IPART analysis of Peel valley bill impacts compared to WaterNSW's proposal ($ nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $9,352 | $7,726 | $8,320 | -2.9% | -11.0% | -6.9% |
| Medium | $46,761 | $38,631 | $41,601 | -2.9% | -11.0% | -6.9% |
| Large | $93,523 | $77,262 | $83,202 | -2.9% | -11.0% | -6.9% |
| **General security** | | | | | | |
| Small | $3,883 | $3,643 | $3,923 | 0.3% | 1.0% | 11.6% |
| Medium | $19,416 | $18,216 | $19,617 | 0.3% | 1.0% | 11.6% |
| Large | $38,832 | $36,432 | $39,233 | 0.3% | 1.0% | 11.6% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

## Lachlan valley

**Table 14.5 IPART analysis of Lachlan valley bill impacts compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $3,760 | $3,413 | $3,675 | -0.6% | -2.2% | -1.9% |
| Medium | $18,799 | $17,064 | $18,376 | -0.6% | -2.2% | -1.9% |
| Large | $37,599 | $34,129 | $36,753 | -0.6% | -2.2% | -1.9% |
| **General security** | | | | | | |
| Small | $1,595 | $1,476 | $1,596 | 0.0% | 0.0% | 4.9% |
| Medium | $7,977 | $7,382 | $7,981 | 0.0% | 0.0% | 4.9% |
| Large | $15,955 | $14,764 | $15,962 | 0.0% | 0.0% | 4.9% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

## Macquarie valley

**Table 14.6 IPART analysis of Macquarie valley bill impacts compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $3,314 | $2,421 | $2,607 | -5.8% | -21.3% | -15.8% |
| Medium | $16,572 | $12,103 | $13,034 | -5.8% | -21.3% | -15.8% |
| Large | $33,144 | $24,207 | $26,068 | -5.8% | -21.3% | -15.8% |
| **General security** | | | | | | |
| Small | $1,380 | $1,074 | $1,163 | -4.2% | -15.8% | -9.7% |
| Medium | $6,902 | $5,370 | $5,813 | -4.2% | -15.8% | -9.7% |
| Large | $13,804 | $10,740 | $11,625 | -4.2% | -15.8% | -9.7% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

## Murray valley

**Table 14.7 IPART analysis of Murray valley bill impacts compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $410 | $400 | $431 | 1.2% | 5.0% | -6.3% |
| Medium | $2,051 | $1,999 | $2,154 | 1.2% | 5.0% | -6.3% |
| Large | $4,101 | $3,997 | $4,308 | 1.2% | 5.0% | -6.3% |
| **General security** | | | | | | |
| Small | $236 | $212 | $229 | -0.7% | -2.9% | 0.9% |
| Medium | $1,179 | $1,059 | $1,144 | -0.7% | -2.9% | 0.9% |
| Large | $2,358 | $2,119 | $2,289 | -0.7% | -2.9% | 0.9% |

**Note:** Excludes BRC & MDBA pass-through charges.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Table 14.8 IPART analysis of Murray valley bill impacts for customers with WaterNSW-owned meters compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $810 | $843 | $908 | 2.9% | 12.1% | 20.3% |
| Medium | $2,499 | $2,452 | $2,642 | 1.4% | 5.7% | 1.9% |
| Large | $4,725 | $4,504 | $4,854 | 0.7% | 2.7% | -3.2% |
| **General security** | | | | | | |
| Small | $635 | $655 | $706 | 2.7% | 11.1% | 30.2% |
| Medium | $1,627 | $1,513 | $1,633 | 0.1% | 0.3% | 11.4% |
| Large | $2,982 | $2,626 | $2,835 | -1.3% | -4.9% | 4.3% |

**Note:** Excludes BRC & MDBA pass-through charges.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

## Murrumbidgee valley

### Table 14.9 IPART analysis of Murrumbidgee valley bill impacts compared to WaterNSW's proposal ($nominal)

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $661 | $632 | $681 | 0.8% | 3.0% | 3.8% |
| Medium | $3,304 | $3,160 | $3,404 | 0.8% | 3.0% | 3.8% |
| Large | $6,607 | $6,319 | $6,808 | 0.8% | 3.0% | 3.8% |
| **General security** | | | | | | |
| Small | $338 | $323 | $348 | 0.7% | 3.0% | 9.6% |
| Medium | $1,690 | $1,613 | $1,741 | 0.7% | 3.0% | 9.6% |
| Large | $3,381 | $3,227 | $3,481 | 0.7% | 3.0% | 9.6% |

**Note:** Excludes BRC & MDBA pass-through charges.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

### Table 14.10 IPART analysis of Murrumbidgee valley bill impacts with WaterNSW-owned meters compared to WaterNSW's proposal ($nominal)

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $1,060 | $1,075 | $1,158 | 2.2% | 9.2% | 20.3% |
| Medium | $3,752 | $3,613 | $3,892 | 0.9% | 3.7% | 8.0% |
| Large | $7,231 | $6,826 | $7,354 | 0.4% | 1.7% | 5.0% |
| **General security** | | | | | | |
| Small | $738 | $766 | $825 | 2.8% | 11.9% | 30.1% |
| Medium | $2,139 | $2,067 | $2,229 | 1.0% | 4.2% | 15.8% |
| Large | $4,005 | $3,734 | $4,027 | 0.1% | 0.6% | 10.7% |

**Note:** Excludes BRC & MDBA pass-through charges.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

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## Lowbidgee valley

**Table 14.11 IPART analysis of Lowbidgee valley bill impacts compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **All customers** | | | | | | |
| | $625,574 | $609,196 | $656,037 | 1.1% | 4.7% | 11.0% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

## North Coast valley

**Table 14.12 IPART analysis of North Coast valley bill impacts compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $5,459 | $5,568 | $5,996 | 2.4% | 9.8% | 46.4% |
| Medium | $27,293 | $27,839 | $29,979 | 2.4% | 9.8% | 46.4% |
| Large | $54,585 | $55,677 | $59,958 | 2.4% | 9.8% | 46.4% |
| **General security** | | | | | | |
| Small | $3,428 | $3,496 | $3,765 | 2.4% | 9.8% | 46.4% |
| Medium | $17,139 | $17,481 | $18,825 | 2.4% | 9.8% | 46.4% |
| Large | $34,277 | $34,963 | $37,651 | 2.4% | 9.8% | 46.4% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

### Hunter valley

**Table 14.13 IPART analysis of Hunter valley bill impacts compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $4,080 | $2,602 | $2,802 | -9.0% | -31.3% | -9.0% |
| Medium | $20,401 | $13,010 | $14,011 | -9.0% | -31.3% | -9.0% |
| Large | $40,802 | $26,020 | $28,021 | -9.0% | -31.3% | -9.0% |
| **General security** | | | | | | |
| Small | $1,772 | $1,800 | $1,938 | 2.3% | 9.4% | -6.1% |
| Medium | $8,860 | $8,998 | $9,690 | 2.3% | 9.4% | -6.1% |
| Large | $17,720 | $17,996 | $19,380 | 2.3% | 9.4% | -6.1% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

### South Coast valley

**Table 14.14 IPART analysis of South Coast valley bill impacts compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $6,150 | $6,154 | $6,627 | 1.9% | 7.8% | 46.4% |
| Medium | $30,752 | $30,770 | $33,136 | 1.9% | 7.8% | 46.4% |
| Large | $61,504 | $61,540 | $66,272 | 1.9% | 7.8% | 46.4% |
| **General security** | | | | | | |
| Small | $3,432 | $3,657 | $3,938 | 3.5% | 14.7% | 46.4% |
| Medium | $17,161 | $18,286 | $19,692 | 3.5% | 14.7% | 46.4% |
| Large | $34,322 | $36,572 | $39,384 | 3.5% | 14.7% | 46.4% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

### 14.1.2 Customer bill impacts from BRC and MDBA pass-through charges

For the Border, Murray and Murrumbidgee valleys, bills are presented:

- with BRC and MDBA pass-through charges only, and
- a combination of WaterNSW bulk water charges plus BRC and MDBA pass-through charges.

Bills are presented for both:

- high security (HS) entitlement holders at 100% of usage, and
- general security (GS) entitlement holders at 60% of usage.

For both HS and GS entitlements, customers are broken down into three categories:

- small customers with 100 ML of entitlements
- medium customers with 500 ML of entitlements, and
- large customers with 1,000 ML of entitlements.

As discussed in Chapter 8, the BRC and MDBA revenue requirements have been smoothed over the 4 years of the determination period with a 1.25% global efficiency factor, compounded per annum. The BRC and MDBA UOM balance has also been included, smoothed over 4 years.

Our BRC and MDBA charges are sometimes higher than WaterNSW's proposed charges, due to our decision to change the:

- price structure for BRC and MDBA charges to 80:20, fixed-to-variable, and
- BRC and MDBA high security premiums.

Figure 14.5 and Figure 14.6 present the impact of BRC and MDBA charges on high security and general security customers in the Border, Murray and Murrumbidgee valleys. Table 14.15 to Table 14.20 set out the BRC and MDBA bill impacts in more detail.

The effect of the pass-through charges would be **most pronounced in high security customer bills in Murray and Murrumbidgee** (ie, increase in bill impacts). This is due to the **combination** of:

- a **substantially larger MDBA pass-through charges** over the 2017 determination period,
- our decision to **adopt an 80:20 tariff structure for MDBA charges,** which means that a larger portion of the (larger) pass-through charges would be recovered as a fixed charge, and
- applying the **updated (increased) high security premium,** which means that high security customers would bear more of the larger pass-through charges through a higher entitlement charge.

We note that **compared to WaterNSW's proposal**, our bill impacts indicate that **high security customers** in the:

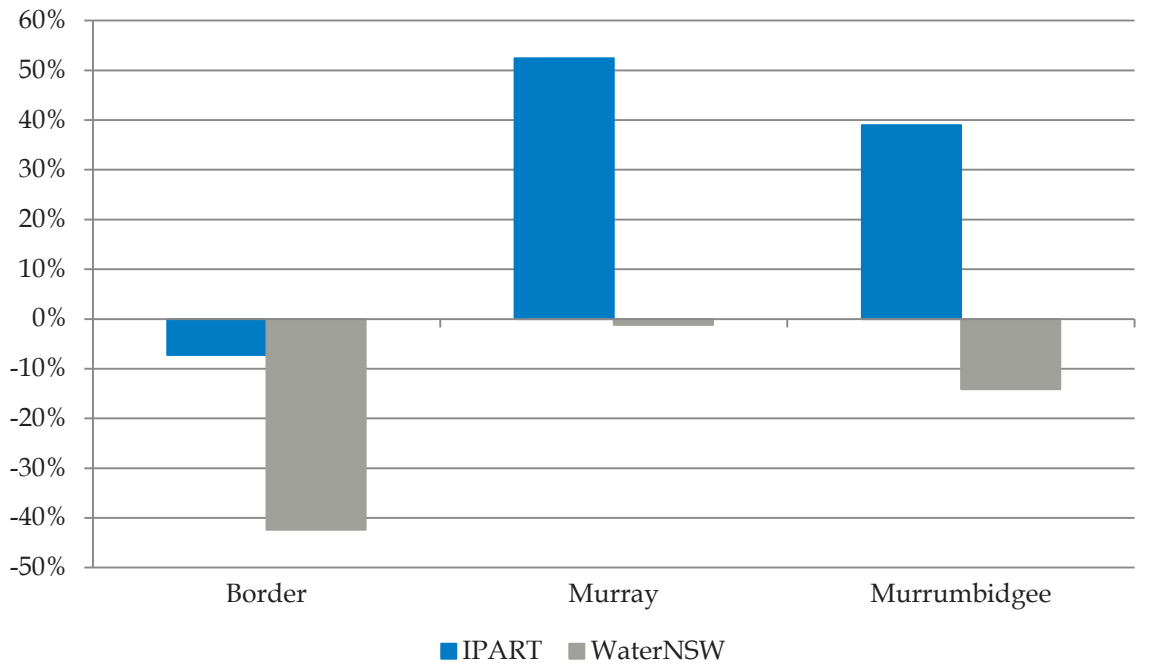
- **Border valley** would experience a smaller decrease than WaterNSW's proposed decrease in bills,
- **Murray valley** would experience an increase rather than WaterNSW's proposed decrease in bills, and
- **Murrumbidgee valley** would experience an increase rather than WaterNSW's proposed decreased in bills.

This is primarily driven by **WaterNSW's proposal to adjust the high security premium** for BRC and MDBA pass-through charges to reduce the impact on high security customers and subsequently increase the impact on general security customers. That is, under WaterNSW's proposal, high security customer bill impacts would reduce by shifting the burden to general security customers through higher prices per entitlement. In contrast, we have applied the standard high security premium. As discussed in Chapter 11, we do not consider it appropriate, in principle, to adjust the high security premium.

Other factors that have contributed to the discrepancy between the IPART's and WaterNSW's BRC and MDBA bill impacts are due to IPART:

- adopting an 80:20 fixed-to-variable tariff structure for MDBA and BRC charges, whereas WaterNSW proposed a 100:0 fixed-to-variable tariff structure,
- applying a 1.25% global efficiency factor, compounded per annum, to BRC and MDBA costs, whereas WaterNSW did not apply an efficiency factor.

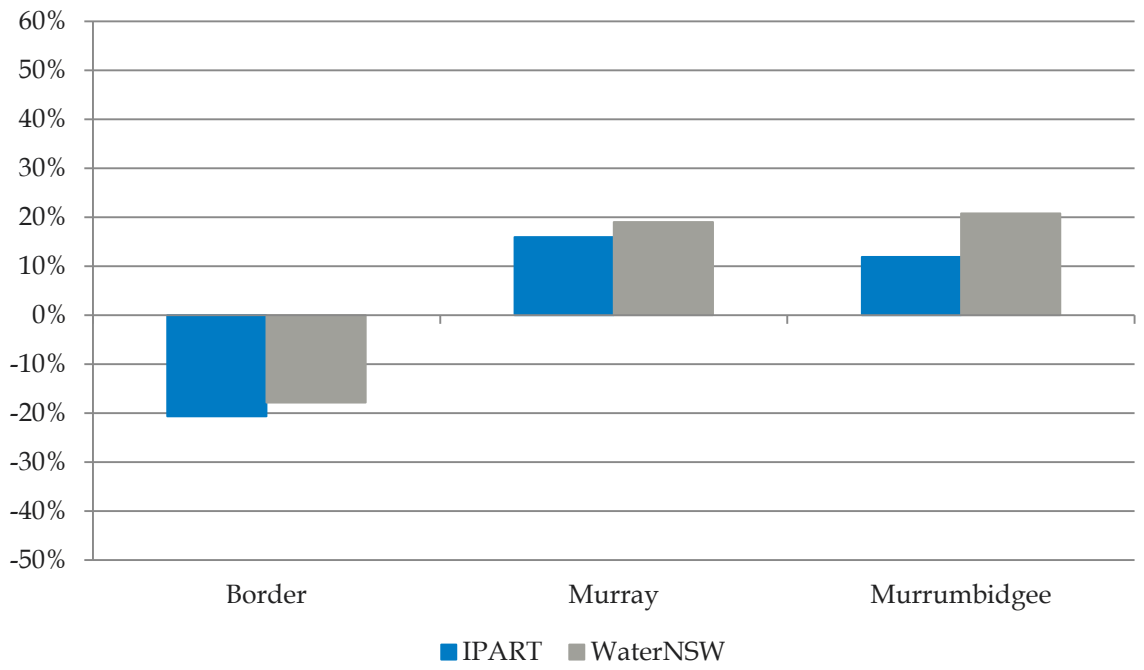
**Figure 14.5 IPART analysis of BRC and MDBA bill impacts for high security customers compared to WaterNSW (% change from 2016-17 to 2020-21)**




**Note:** Excludes WaterNSW's bulk water services charges.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Figure 14.6 IPART analysis of BRC and MDBA bill impacts for general security customers compared to WaterNSW (% change from 2016-17 to 2020-21)**




**Notes:** Excludes WaterNSW's bulk water services charges.

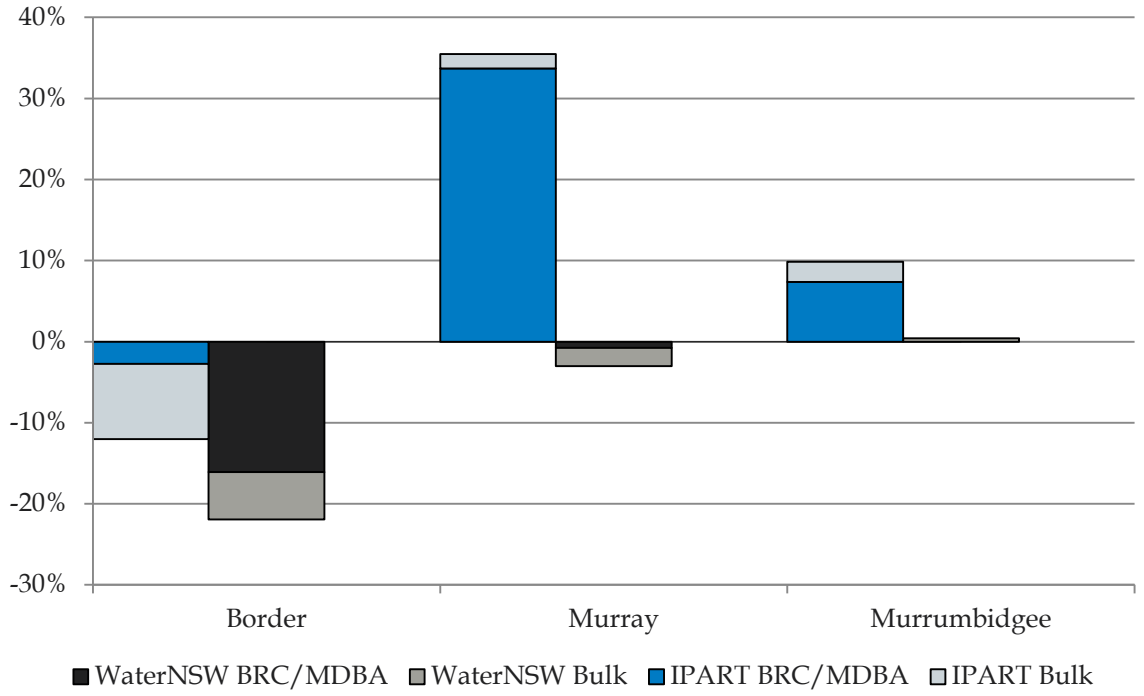
**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

Figure 14.7 and Figure 14.8 below, present the total bill impact of WaterNSW's bulk water charges plus BRC and MDBA pass-through charges on customers in the Border, Murray and Murrumbidgee valleys (in nominal terms).

In these figures, we note that for:

- HS customers in the Murrumbidgee valley, WaterNSW's proposed bill impacts indicate that the impact of the increase in bulk water services bills negate the impact of the decrease in MDBA bills (Figure 14.7).
- GS customers in the Murray valley, IPART's analysis of bill impacts indicate that the impact of the increase in MDBA bills negate the impact of the decrease in bulk water services bills (Figure 14.8).

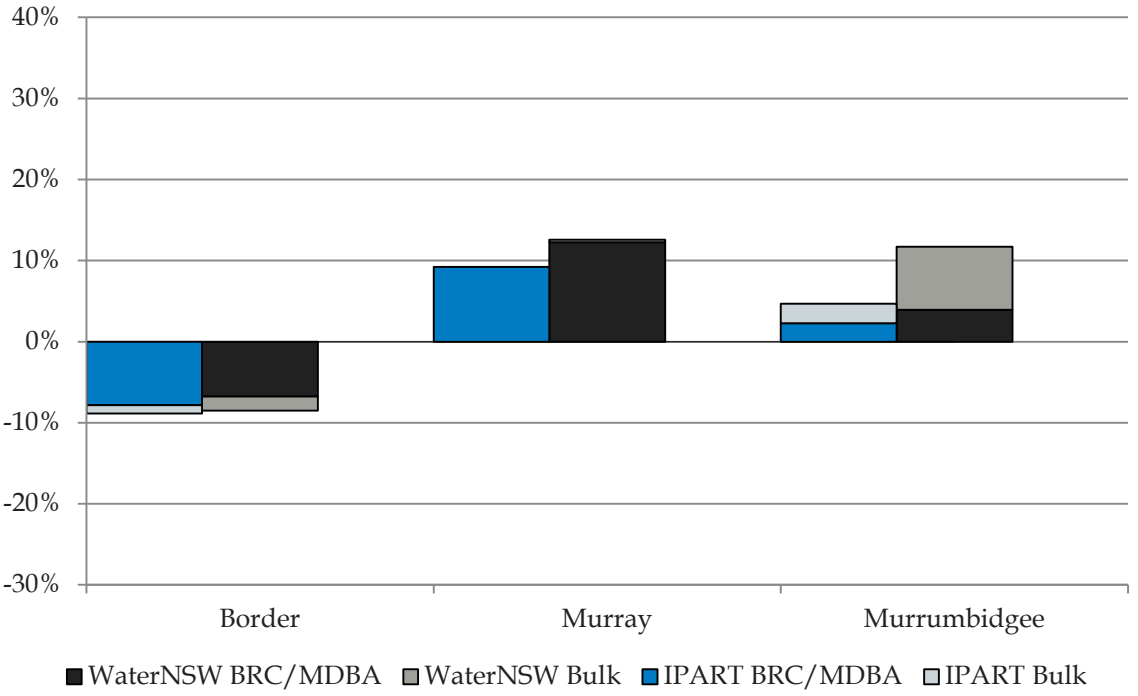
**Figure 14.7 IPART analysis of bill impacts (bulk water charges plus BRC & MDBA) for high security customers compared to WaterNSW's proposal (% change from 2016-17 to 2020-21)**




**Notes:** WaterNSW's analysis of bill impacts for HS customers in the Murrumbidgee valley indicate that the impact of increased bulk water bills outweighed the impact of decreased MDBA bills. Analysis do not include customers with WaterNSW owned meters.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Figure 14.8 IPART analysis of bill impacts (bulk water charges plus BRC & MDBA) for general security customers compared to WaterNSW's proposal (% change from 2016-17 to 2020-21)**




**Notes:** IPART's analysis of bill impacts for GS customers in the Murray valley indicate that the impact of increased MDBA bills outweighed the impact of decreased bulk water bills. Analysis do not include customers with WaterNSW owned meters.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Table 14.15 IPART analysis of BRC bill impacts in the Border valley compared to WaterNSW WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $826 | $711 | $766 | -1.9% | -7.2% | -42.4% |
| Medium | $4,128 | $3,556 | $3,829 | -1.9% | -7.2% | -42.4% |
| Large | $8,256 | $7,112 | $7,659 | -1.9% | -7.2% | -42.4% |
| **General security** | | | | | | |
| Small | $391 | $288 | $310 | -5.6% | -20.6% | -17.8% |
| Medium | $1,953 | $1,440 | $1,551 | -5.6% | -20.6% | -17.8% |
| Large | $3,906 | $2,880 | $3,101 | -5.6% | -20.6% | -17.8% |

**Notes:** Excludes WaterNSW bulk water charges.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Table 14.16 IPART analysis of MDBA bill impacts in the Murray valley compared to WaterNSW WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $738 | $1,045 | $1,125 | 11.1% | 52.4% | -1.2% |
| Medium | $3,692 | $5,225 | $5,627 | 11.1% | 52.4% | -1.2% |
| Large | $7,384 | $10,450 | $11,253 | 11.1% | 52.4% | -1.2% |
| **General security** | | | | | | |
| Small | $424 | $457 | $492 | 3.8% | 16.0% | 19.1% |
| Medium | $2,122 | $2,286 | $2,461 | 3.8% | 16.0% | 19.1% |
| Large | $4,244 | $4,571 | $4,923 | 3.8% | 16.0% | 19.1% |

**Note:** Excludes WaterNSW bulk water charges.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Table 14.17 IPART analysis of MDBA bill impacts in the Murrumbidgee valley compared to WaterNSW WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $154 | $199 | $214 | 8.6% | 39.0% | -14.1% |
| Medium | $771 | $994 | $1,071 | 8.6% | 39.0% | -14.1% |
| Large | $1,541 | $1,989 | $2,142 | 8.6% | 39.0% | -14.1% |
| **General security** | | | | | | |
| Small | $79 | $82 | $88 | 2.9% | 12.0% | 20.8% |
| Medium | $394 | $410 | $441 | 2.9% | 12.0% | 20.8% |
| Large | $788 | $820 | $883 | 2.9% | 12.0% | 20.8% |

**Note:** Excludes WaterNSW bulk water charges.

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Table 14.18 IPART analysis of total bill impact in the Border valley (bulk water charges plus BRC) compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $2,175 | $1,777 | $1,914 | -3.1% | -12.0% | -21.9% |
| Medium | $10,876 | $8,887 | $9,570 | -3.1% | -12.0% | -21.9% |
| Large | $21,751 | $17,773 | $19,140 | -3.1% | -12.0% | -21.9% |
| **General security** | | | | | | |
| Small | $1,029 | $867 | $938 | -2.3% | -8.8% | -8.5% |
| Medium | $5,146 | $4,334 | $4,690 | -2.3% | -8.8% | -8.5% |
| Large | $10,291 | $8,668 | $9,381 | -2.3% | -8.8% | -8.5% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Table 14.19 IPART analysis of total bill impact in the Murray valley (bulk water charges plus MDBA) compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $1,148 | $1,445 | $1,556 | 7.9% | 35.5% | -3.0% |
| Medium | $5,742 | $7,224 | $7,781 | 7.9% | 35.5% | -3.0% |
| Large | $11,485 | $14,447 | $15,561 | 7.9% | 35.5% | -3.0% |
| **General security** | | | | | | |
| Small | $660 | $669 | $721 | 2.2% | 9.2% | 12.6% |
| Medium | $3,301 | $3,345 | $3,606 | 2.2% | 9.2% | 12.6% |
| Large | $6,602 | $6,690 | $7,212 | 2.2% | 9.2% | 12.6% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Table 14.20 IPART analysis of total bill impact in the Murrumbidgee valley (bulk water charges plus MDBA) compared to WaterNSW's proposal ($nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **High security** | | | | | | |
| Small | $815 | $831 | $895 | 2.4% | 9.8% | 0.4% |
| Medium | $4,074 | $4,154 | $4,475 | 2.4% | 9.8% | 0.4% |
| Large | $8,148 | $8,308 | $8,950 | 2.4% | 9.8% | 0.4% |
| **General security** | | | | | | |
| Small | $417 | $405 | $436 | 1.1% | 4.7% | 11.7% |
| Medium | $2,085 | $2,023 | $2,182 | 1.1% | 4.7% | 11.7% |
| Large | $4,169 | $4,047 | $4,364 | 1.1% | 4.7% | 11.7% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

### 14.1.3 Fish River Water Supply Scheme

For the FRWS scheme, our analysis of bill impacts is based on:

- MAQs in the water sharing plan for major customers, and a deemed MAQ of 200kL for minor individual customers (both raw and filtered),
- 20-year average (ie, forecast) water usage for each customer type excluding EnergyAustralia, and
- 1,514ML usage for EnergyAustralia.[302]

Figure 14.9 and Figure 14.10 below present the bill impacts of our draft determination on bulk raw water and bulk filtered water customers in the Fish River Water Supply Scheme. Table 14.21 sets out the bill impacts for customers in the FRWS scheme in more detail.

**In nominal terms, all customers, except EnergyAustralia, would experience a bill decrease, or a small bill increase at or below the rate of inflation, over the 2017 determination.** EnergyAustralia would experience a small bill increase (22% from 2016-17 to 2020-21, $nominal, ie, with inflation) due to the shift from a 54:46 to 90:10 fixed to variable ratio. For more details about prices in the FRWS scheme, refer to Chapter 12.

In nominal terms, Lithgow Council would experience a bill increase compared to current bills. This can be attributed to a combination of:

- our decision to change from a 55:45 to an 80:20 fixed-to-variable tariff structure for the FRWS. As a result of this, tariff structures for Lithgow council changed from 65:35 to 79:21. This results in higher MAQ prices and lower usage prices for bulk filtered water customers (see Chapter 12), and

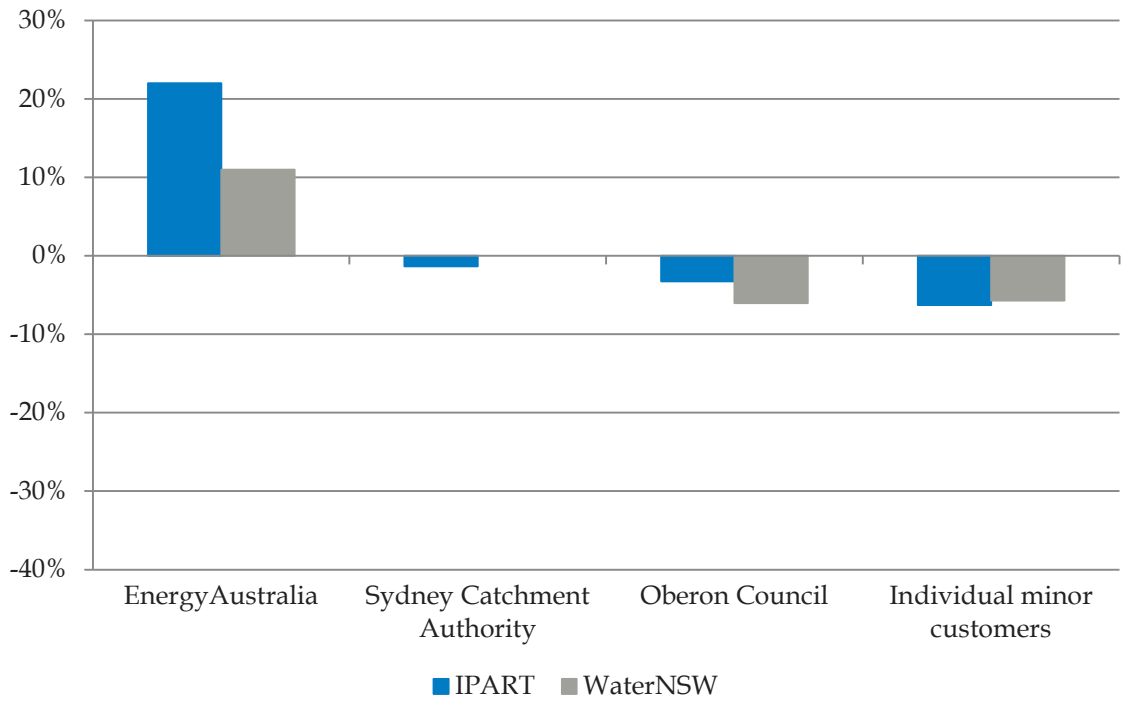
302 To account for the closure of Wallerawang Power Station, forecast usage is based only on EnergyAustralia's Mt Piper Station as discussed in Chapter 10.

- Lithgow Council uses only 50% of its MAQ, compared to other bulk filtered water customers which use about three times their MAQ.

Our bill impacts analysis shows that, **compared to WaterNSW's proposal**:

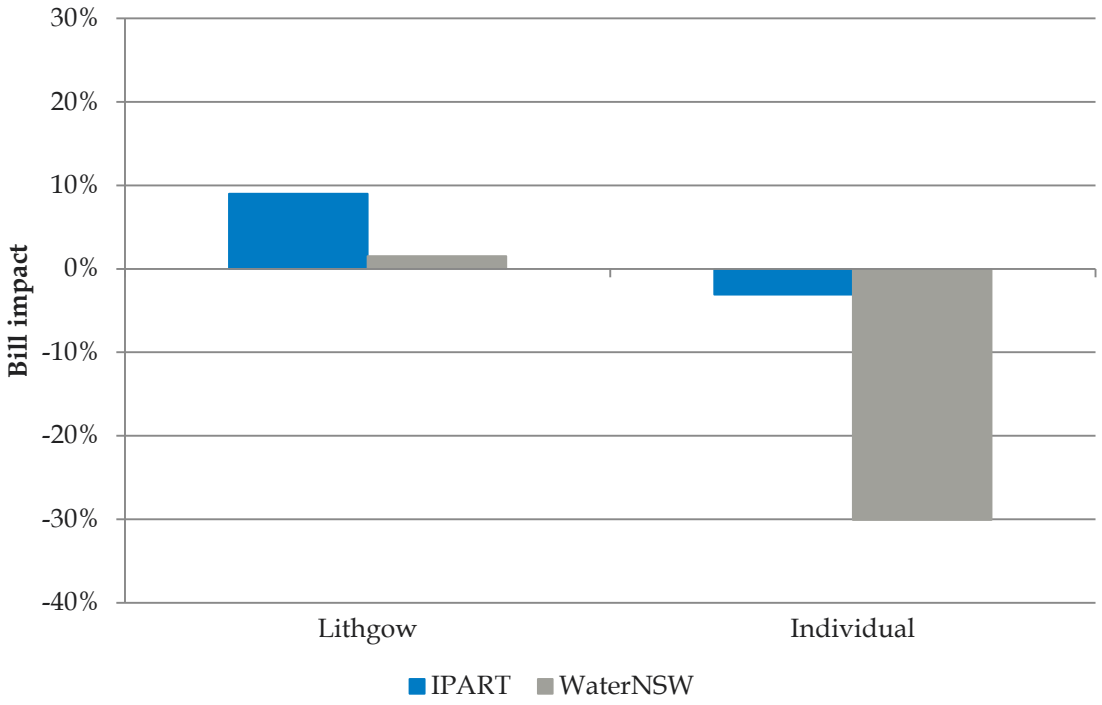
- **Lithgow council** would experience a larger bill increase than WaterNSW's proposed increase. This is due to our higher prices resulting from the inclusion of a UOM payback ($0.05 per ML per year) and the change in tariff structures (from 65:35 to 79:21)
- **Individual bulk filtered water customers** would experience a smaller bill decrease than WaterNSW's proposed decrease which can be attributed to the UOM payback ($0.06 per ML per year) and the change in tariff structures (from 15:85 to 22:78). The impact on individual minor customers is larger (ie, a significantly smaller decrease) than the impact on Lithgow council as usage by individual customers is forecast to be three times higher than Lithgow council's forecast usage.

**Figure 14.9 IPART analysis of bill impacts for bulk raw water customers compared to WaterNSW (% change from 2016-17 to 2020-21)**




**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Figure 14.10 IPART analysis of bill impacts for bulk filtered water customers compared to WaterNSW (% change from 2016-17 to 2020-21)**




**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

**Table 14.21 IPART analysis of bill impacts for customers in the FRWS scheme compared to WaterNSW's proposal ($ nominal)**

| | 2016-17 (Current) | 2017-18 | 2020-21 | Annuitised % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 | % change 2016-17 to 2020-21 (WaterNSW's proposal) |
|---|---|---|---|---|---|---|
| **Bulk raw water** | | | | | | |
| EnergyAustralia | $3,418,816 | $3,858,225 | $4,171,393 | 5.1% | 22.0% | 11.0% |
| Sydney Catchment Authority | $2,348,127 | $2,151,175 | $2,316,580 | -0.3% | -1.3% | Not applicable |
| Oberon Council | $709,534 | $637,458 | $686,473 | -0.8% | -3.3% | -6.0% |
| Individual minor customers | $476 | $414 | $446 | -1.6% | -6.2% | -5.7% |
| **Bulk filtered water** | | | | | | |
| Lithgow Council | $1,542,666 | $1,556,626 | $1,681,225 | 2.2% | 9.0% | 1.5% |
| Individual customers | $794 | $712 | $770 | -0.8% | -3.1% | -30.1% |

**Source:** WaterNSW pricing proposal to IPART, June 2016, pp 49-58; IPART analysis.

## 14.2 Impact on WaterNSW's financial viability and shareholders

The sections below consider other impacts of our draft pricing decisions, including impacts on WaterNSW and the NSW Government, as well as potential implications for the environment.

### 14.2.1 Impact on WaterNSW's financial viability

We undertake financeability tests to assess the short-term financial sustainability of utilities that we regulate. This means that we assess whether the utility will be able to raise finance, consistent with an investment grade-rated firm, during the regulatory period. Our December 2013 Final Decision on Financeability tests in price regulation states that this test will examine the firm's actual gearing ratio and a forecast of the actual interest expense.[303]

Our financeability test involves calculating three credit metrics and comparing them to the Baa2 benchmarks:[304]

- Funds from operations (FFO) interest cover: calculated as FFO plus interest expense divided by interest expense. This is a coverage ratio and measures a utility's ability to service its debt prior to repayment.
- Debt gearing (Debt/RAB): calculated as debt divided by the regulatory value of fixed assets plus working capital. This is a leverage ratio and measures a utility's ability to repay its debt.

303 IPART, *Financeability tests in price regulation - Final Report*, December 2013.
304 IPART, *Financeability tests in price regulation - Final Report*, December 2013, p10.

- FFO over net debt: calculated as FFO divided by net debt. This is a more dynamic measure of leverage than debt gearing and a useful indicator of a utility's ability to generate cash flows.

In applying the financeability test to WaterNSW's rural valleys, we considered whether the test should be performed on the entire WaterNSW entity, which includes WaterNSW Greater Sydney, or the rural valley business of WaterNSW only.

Our draft decision is to apply the financeability test to the entire WaterNSW entity, for the following reasons.

- It is the legal entity that borrows money. It has a single credit rating across the entire organisation.
- If the whole enterprise is solvent, it is not possible for part of it to be insolvent. Similarly, if the whole enterprise is insolvent, it is not possible for part of it to be solvent.
- WaterNSW Greater Sydney financeability was tested at the corporate level:
  - In our 2016 Final Report on WaterNSW Greater Sydney, we tested financeability at the WaterNSW corporate level, not treating WaterNSW Greater Sydney as a stand-alone business.
  - A key reason for this approach was that WaterNSW was unable to provide separate actual debt levels and interest costs for its Greater Sydney and Rural regulated businesses.[305]

The benchmarks for each metric are shown in Table 14.22 below. We target a Baa2 credit rating.

**Table 14.22 IPART rating categories and benchmarks**

| Ratio | A3 | Baa1 | Baa2 | Baa3 | Ba1 |
|---|---|---|---|---|---|
| FFO interest cover | >2.9 | 2.3-2.9 | 1.7-2.5 | 1.4/1.5-1.7 | <1.4/1.5 |
| Debt gearing | <60% | 80-85% | 60-91% | 90-100% | >100% |
| FFO over debt | >10% | >10% | 6-10% | 5-8% | <4% |

**Source:** IPART, *Final Decision – Financeability tests in price regulation*, December 2013, p 10.

The results of the financeability test on WaterNSW are shown in Table 14.23 below.

**Table 14.23 Financeability test results for WaterNSW**

| Financial Year | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|---|
| FFO Interest Cover | 4.1 | 3.5 | 3.4 | 3.2 | 3.4 |
| Debt / RAB | 32% | 33% | 33% | 33% | 32% |
| FFO / Debt | 13% | 12% | 13% | 13% | 13% |

**Source:** IPART analysis.

Each of WaterNSW's ratios is better than the benchmark for a Baa2 credit rating in all of the years of the determination. Therefore, we consider that WaterNSW will be able to raise finance, consistent with an investment grade-rated firm, under our Draft Determination.

305 IPART, *Review of prices for WaterNSW: From 1 July 2016 to 30 June 2020 – Final Report*, June 2016, p 86.

### 14.2.2 Implications on the Consolidated Fund

Under the IPART Act 1992 (NSW), Section 16, we are required to report on the likely impact to the Consolidated Fund if prices are not increased to the maximum levels permitted. If this is the case, then the level of tax equivalent and dividends paid to the Consolidated Fund would fall. The extent of this fall would depend on Treasury's application of its financial distribution policy and how the change affects after-tax profit.

Our financial modelling is based on a tax rate of 30% for pre-tax profit and dividend payments at 70% of after-tax profit. A $1 decrease in pre-tax profit would result in a loss of revenue to the Consolidated Fund of 49 cents in total, which is 70% of the decrease in after-tax profit of 70 cents.

#### Impact from Government share of WaterNSW's NRR

Chapter 3 provides our decision on allocating WaterNSW's costs to the Government, on behalf of the community. Table 14.24 indicates that the government share of WaterNSW's NRR would impact the Consolidated Fund by $35.2 million per year. For the 2017 Determination, the average Government share of NRR per year is 7.4% lower than the current share of NRR, and 0.7% higher compared to WaterNSW's proposed Government share of NRR.

**Table 14.24 Government share of WaterNSW's NRR for the 2017 Determination period ($'000, $2016-17)**

| | 2016-17 | 2017-18 | 2020-21 | Total 2017-18 to 2020-21 (NPV) | Average per year 2017-18 to 2020-21 | Average compared to 2016-17 | Average compared to WaterNSW proposed |
|---|---|---|---|---|---|---|---|
| Operating expenditure | 3,829 | 4,045 | 3,647 | 14,443 | 3,934 | 2.7% | 11.1% |
| ICD rebates | - | - | - | - | - | - | - |
| Return of capital (depreciation) | 9,335 | 9,126 | 9,383 | 34,225 | 9,288 | -0.5% | -4.0% |
| Return on capital | 22,231 | 17,161 | 17,119 | 63,570 | 17,258 | -22.4% | 2.6% |
| Tax allowance | - | 348 | 589 | 1,751 | 479 | - | -31.2% |
| Volatility allowance | - | - | - | - | - | - | - |
| UOM payback | - | - | - | - | - | - | - |
| MDBA and BRC costs | 2,639 | 3,047 | 4,613 | 15,621 | 4,260 | 61.4% | - |
| Total NRR | 38,033 | 33,727 | 35,352 | 129,609 | 35,219 | **-7.4%** | 0.7% |

**Source:** WaterNSW pricing proposal to IPART, June 2016; WaterNSW Information Return, June 2016; IPART analysis.

#### Impact from BRC and MDBA pass-through charges

Chapter 7 outlines our decision for allocating BRC and MDBA costs customers (and hence the residual to the Government). Table 14.25 and Table 14.26 indicate that the BRC and MDBA costs (including the application of the 1.25% global efficiency factor, compounded

annually) would impact the Consolidated Fund by $4.872 million per year. That is, the Consolidated Fund would be impacted by:

- $4.260 million per year as indicated in Table 14.24 above, and
- a further $0.612 million per year as a result of the application of the 1.25% global efficiency factor, compounded annually.

**Table 14.25 Impact of BRC pass-through charges on the Consolidated Fund ($'000, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Total 2017-18 to 2020-21 (NPV) | Average per year 2017-18 to 2020-21 |
|---|---|---|---|---|---|---|
| **WaterNSW proposal** | | | | | | |
| BRC revenue requirement | $1,100 | $1,100 | $1,100 | $1,100 | $4,057 | $1,100 |
| Customer share | $694 | $718 | $715 | $715 | $2,619 | $711 |
| Government share | $406 | $382 | $385 | $385 | $1,438 | $390 |
| Customer share % | 63.1% | 65.3% | 65.0% | 65.0% | 64.6% | 64.6% |
| Impact on Consolidated Fund | $406 | $382 | $385 | $385 | $1,438 | $390 |
| **IPART adjusted** | | | | | | |
| Adjusted BRC revenue requirement (with global efficiency factor) | $1,086 | $1,072 | $1,058 | $1,044 | $3,931 | $1,065 |
| Customer share | $685 | $700 | $688 | $679 | $2,538 | $688 |
| Government share | $401 | $372 | $370 | $365 | $1,393 | $377 |
| Customer share % | 63.1% | 65.3% | 65.0% | 65.0% | 64.6% | 64.6% |
| Impact on Consolidated Fund | $415 | $400 | $412 | $421 | $1,519 | $412 |
| Impact of global efficiency factor | $14 | $28 | $42 | $56 | $126 | $35 |

**Note:** The BRC UOM balance is not included.

**Source:** WaterNSW pricing proposal to IPART, June 2016; IPART analysis.

**Table 14.26 Impact of MDBA pass-through charges on the Consolidated Fund ($'000, $2016-17)**

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | Total 2017-18 to 2020-21 (NPV) | Average per year 2017-18 to 2020-21 |
|---|---|---|---|---|---|---|
| **WaterNSW proposal** | | | | | | |
| MDBA revenue requirement | $20,843 | $18,356 | $17,842 | $17,842 | $69,223 | $18,721 |
| Customer share | $18,163 | $13,914 | $13,366 | $13,366 | $54,508 | $14,702 |
| Government share | $2,680 | $4,442 | $4,476 | $4,476 | $14,716 | $4,019 |
| Customer share % | 87.1% | 75.8% | 74.9% | 74.9% | 78.7% | 78.5% |
| Impact on Consolidated Fund | $2,680 | $4,442 | $4,476 | $4,476 | $14,716 | $4,019 |
| **IPART adjusted** | | | | | | |
| Adjusted MDBA revenue requirement (with global efficiency factor) | $20,582 | $17,894 | $17,165 | $16,933 | $67,137 | $18,144 |
| Customer share | $17,936 | $13,564 | $12,858 | $12,685 | $52,909 | $14,261 |
| Government share | $2,647 | $4,330 | $4,306 | $4,248 | $14,227 | $3,883 |
| Customer share % | 87.1% | 75.8% | 74.9% | 74.9% | 78.8% | 78.6% |
| Impact on Consolidated Fund | $2,907 | $4,792 | $4,984 | $5,157 | $16,315 | $4,460 |
| Impact of global efficiency factor | $261 | $462 | $677 | $909 | $2,088 | $577 |

**Note:** The MDBA UOM balance is not included.

**Source:** WaterNSW pricing proposal to IPART, June 2016; IPART analysis.

### Impact from under recovery of customer share of costs in North Coast and South Coast valleys

Section 12.4 outlines our decision on setting draft prices for the North Coast and South Coast valleys. A shortfall in revenue occurs in these valleys, as the draft prices do not fully recover the customers' share of costs in the North Coast and South Coast (see Table 14.27 and Table 14.28).

This under recovery of costs and revenue shortfall would need to be borne by WaterNSW or recovered from the NSW Government as shareholder. Table 14.27 and Table 14.28 indicate the level of under recovery for the North Coast and South Coast under our draft prices. If the under recovery was to be borne by the NSW Government, this would impact the Consolidated Fund by $1.4 million per year.

**Table 14.27 IPART and WaterNSW proposed user NRR and target revenue for the North Coast valley ($'000, $2016-17)**

| | IPART | WaterNSW proposed |
|---|---|---|
| Customer NRR[a] | 3,536 | 3,536 |
| Target revenue | 347 | 413 |
| Amount under recovered by | 3,188 | 3,122 |
| Cost recovery % | 9.8% | 11.7% |

a Customer NRR is based on IPART forecast volumes and entitlements.

**Note:** Figures presented in this table are net present value (NPV) over the 4-year determination period.

**Source:** WaterNSW Information Return, June 2016; WaterNSW Information Return, September 2016; IPART analysis.

The level of under recovery in the North Coast valley is particularly low (9.8% cost recovery), recovering about 20% of operating costs only. If the under recovery in the North Coast was to be borne by the NSW Government, this would impact the Consolidated Fund by $0.89 million per year.

**Table 14.28 IPART and WaterNSW proposed user NRR and target revenue for the South Coast valley over 2017 Determination period ($'000, $2016-17)**

| | IPART | WaterNSW proposed |
|---|---|---|
| Customer NRR[a] | 3,037 | 3,037 |
| Target revenue | 1,176 | 1,356 |
| Amount under recovered by | 1,862 | 1,681 |
| Cost recovery % | 38.7% | 44.6% |

a Customer NRR is based on IPART forecast volumes and entitlements.

**Note:** Figures presented in this table are net present value (NPV) over the 4-year determination period.

**Source:** WaterNSW Information Return, June 2016; WaterNSW Information Return, September 2016; IPART analysis.

The level of cost-recovery in the South Coast valley (38.7% FCR) is higher than in the the North Coast valley, and recovers about 71% of operating costs. If the under recovery in the South Coast was to be borne by the NSW Government, this would impact the Consolidated Fund by $0.52 million per year.

### 14.2.3 Implications for the environment

WaterNSW's environmental impacts are regulated by relevant Commonwealth, NSW and local environmental legislation, regulation and regulatory bodies.

As discussed in Chapter 5 and Chapter 6, we consider that our decisions on prudent and efficient capital and operating expenditure should allow WaterNSW to continue to meet its environmental requirements over the 2017 determination period.

Our approach to considering the environment (as well as broader issues of 'liveability') in our price determinations is outlined further in Chapter 2 of our 2016 report on our determination of Sydney Water's prices.[306]

306 IPART, *Review of prices for Sydney Water Corporation – From 1 July 2016 to 30 June 2020 – Final Report*, June 2016, pp 34-41.

# Appendices

# A Matters to be considered

## A.1 Matters to be considered by IPART 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):

c) the cost of providing the services concerned

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

e) 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

f) the effect on general price inflation over the medium-term

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

h) 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

i) 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

j) 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

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

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

m) the social impact of the determinations and recommendations

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

Table A.1 outlines the sections of the report that address each matter.

**Table A.1 Consideration of section 15 matters by IPART**

| Section 15(1) | | Report reference |
|---|---|---|
| a) | the cost of providing the services | Chapter 4 to 9, and 13 |
| b) | the protection of consumers from abuses of monopoly power | Chapter 2 to 9, 11 to 14, and Appendix B |
| c) | the appropriate rate of return and dividends | Chapter 7 |
| d) | the effect on general price inflation | Chapter 14 generally. We note that in most instances, prices are decreasing and impacts on general price inflation are likely to be minimal. |
| e) | the need for greater efficiency in the supply of services | Chapter 5 and 6 |
| f) | ecologically sustainable development | Section 14.2.3 |
| g) | the impact on borrowing, capital and dividend requirements | Chapter 7 and section 14.2.1 |
| h) | impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body | Not applicable |
| i) | need to promote competition | Chapter 3, 12 and 13 |
| j) | considerations of demand management and least cost planning | Chapter 6, 10, 12 and 13 |
| k) | the social impact | Chapter 14 |
| l) | standards of quality, reliability and safety | Chapter 5 and 6, and Appendix B |

## A.2 Matters to be considered by IPART under the Water Act (2007)

Rule 29 of the WCIR (2010)[307] sets out the matters that we are required to consider in determining charges for MDB valleys. Rule 29(2) and (3) specify the matters that IPART must be satisfied of when approving or determining regulated charges. Rule 29(4) explains the relevance of the Basin water charging objectives and principles that are set out below.[308]

### Schedule 2—Basin water charging objectives and principles[309]

*Part 2— Water charging objectives*

The water charging objectives are:

a) to promote the economically efficient and sustainable use of:
   iv) water resources; and
   v) water infrastructure assets; and
   vi) government resources devoted to the management of water resources; and

b) to ensure sufficient revenue streams to allow efficient delivery of the required services; and

307 Water Charge (Infrastructure) Rules 2010 (Cth).
308 Under the Water Act 2007, schedule 2 (Cth).
309 See Water Act 2007, schedule 2 (Cth), https://www.legislation.gov.au/Details/C2016C00469

c) to facilitate the efficient functioning of water markets (including inter-jurisdictional water markets, and in both rural and urban settings); and

d) to give effect to the principles of user-pays and achieve pricing transparency in respect of water storage and delivery in irrigation systems and cost recovery for water planning and management; and

e) to avoid perverse or unintended pricing outcomes.

***Part 3— Water charging principles***

*Water storage and delivery*

4. Pricing policies for water storage and delivery in rural systems are to be developed to facilitate efficient water use and trade in water entitlements.

5. Water charges are to include a consumption-based component.

6. Water charges are to be based on full cost recovery for water services to ensure business viability and avoid monopoly rents, including recovery of environmental externalities where feasible and practical.

7. Water charges in the rural water sector are to continue to move towards upper bound pricing where practicable.

8. In subclause (4): upper bound pricing means the level at which, to avoid monopoly rents, a water business should not recover more than:

f) the operational, maintenance and administrative costs, externalities, taxes or tax equivalent regimes; and

g) provision for the cost of asset consumption; and

h) provision for the cost of capital (calculated using a weighted average cost of capital).

9. If full cost recovery is unlikely to be achieved and a Community Service Obligation is deemed necessary:

i) the size of the subsidy is to be reported publicly; and

j) where practicable, subsidies or Community Service Obligations are to be reduced or eliminated.

10. Pricing policies should ensure consistency across sectors and jurisdictions where entitlements are able to be traded.

*Cost recovery for planning and management*

11. All costs associated with water planning and management must be identified, including the costs of underpinning water markets (such as the provision of registers, accounting and measurement frameworks and performance monitoring and benchmarking).

12. The proportion of costs that can be attributed to water access entitlement holders is to be identified consistently with the principles set out in subclauses (3) and (4).

13. Water planning and management charges are to be linked as closely as possible to the costs of activities or products.

14. Water planning and management charges are to exclude activities undertaken for the Government (such as policy development and Ministerial or Parliamentary services).

15. States and Territories are to report publicly on cost recovery for water planning and management annually. The reports are to include:
    k) the total cost of water planning and management; and
    l) the proportion of the total cost of water planning and management attributed to water access entitlement holders, and the basis upon which this proportion is determined.

*Environmental externalities*

16. Market-based mechanisms (such as pricing to account for positive and negative environmental externalities associated with water use) are to be pursued where feasible.

17. The cost of environmental externalities is to be included in water charges where found to be feasible.

*Benchmarking and efficiency reviews*

18. Independent and public benchmarking or efficiency reviews of pricing and service quality relevant to regulated water charges is or are to be undertaken based on a nationally consistent framework.

19. The costs of operating these benchmarking and efficiency review systems are to be met through recovery of regulated water charges.

Table A.2 outlines the sections of the report that address each matter.

**Table A.2 Consideration of Water Act 2007 schedule 2 matters by IPART**

| Schedule 2 | Report reference |
|---|---|
| ***Part 2 – Water charging objectives*** | |
| a) to promote the economically efficient and sustainable use of:<br>(i) water resources; and<br>(ii) water infrastructure assets; and<br>(iii) government resources devoted to the management of water resources; and | Chapter 2 to 9, and 11 to 14 |
| b) to ensure sufficient revenue streams to allow efficient delivery of the required services; and | Chapter 4 |
| c) to facilitate the efficient functioning of water markets (including inter-jurisdictional water markets, and in both rural and urban settings); and | Chapter 2 |
| d) to give effect to the principles of user-pays and achieve pricing transparency in respect of water storage and delivery in irrigation systems and cost recovery for water planning and management; and | Chapter 4, 8, 9 and 13 |
| e) to avoid perverse or unintended pricing outcomes. | Chapter 2 to 4, 8, 9, 11 and 13 |
| ***Part 3 – Water charging principles*** | |
| *Water storage and delivery* | |
| 1. Pricing policies for water storage and delivery in rural systems are to be developed to facilitate efficient water use and trade in water entitlements. | Chapter 4, 12 and 13 |
| 2. Water charges are to include a consumption-based component. | Chapter 1, 11, 12 and 13 |
| 3. Water charges are to be based on full cost recovery for water services to ensure business viability and avoid monopoly rents, including recovery of environmental externalities where feasible and practical. | Chapter 2, 3, 4, 12, 13 and 14 |

| | |
|---|---|
| 4. Water charges in the rural water sector are to continue to move towards upper bound pricing where practicable. | Chapter 2, 3, 4, 12 and 13 |
| 5. In subclause (4): upper bound pricing means the level at which, to avoid monopoly rents, a water business should not recover more than:<br>f) the operational, maintenance and administrative costs, externalities, taxes or tax equivalent regimes; and<br>g) provision for the cost of asset consumption; and<br>h) provision for the cost of capital (calculated using a weighted average cost of capital). | Chapter 2 to 8, 12 and 13 |
| 6. If full cost recovery is unlikely to be achieved and a Community Service Obligation is deemed necessary:<br>i) the size of the subsidy is to be reported publicly; and<br>j) where practicable, subsidies or Community Service Obligations are to be reduced or eliminated. | Chapter 12 and 14 and section 8.1 |
| 7. Pricing policies should ensure consistency across sectors and jurisdictions where entitlements are able to be traded. | Chapter 12 |
| *Cost recovery for planning and management* | Not applicable.<br>We have considered this as part of our 2016 review of prices that the Water Administration Ministerial Corporation (WAMC) can charge for its monopoly water planning and management services. (See our Final Report, *Review of prices for the Water Administration Ministerial Corporation from 1 July 2016*.)[310] |
| *Environmental externalities* | |
| 1. Market-based mechanisms (such as pricing to account for positive and negative environmental externalities associated with water use) are to be pursued where feasible. | Chapter 9 and Appendix F |
| 2. The cost of environmental externalities is to be included in water charges where found to be feasible. | Chapter 5, 6, 9 and 14 |
| *Benchmarking and efficiency reviews* | |
| 3. Independent and public benchmarking or efficiency reviews of pricing and service quality relevant to regulated water charges is or are to be undertaken based on a nationally consistent framework. | Chapter 5, 6 and Appendix B |
| 4. The costs of operating these benchmarking and efficiency review systems are to be met through recovery of regulated water charges. | Chapter 4, 12 and 13 |

310 IPART, *Review of prices for the Water Administration Ministerial Corporation from 1 July 2016,* Final Report, June 2016.

# B Output measures

We set output measures for the water agencies that we regulate to inform us and stakeholders whether they are delivering on their planned capital expenditure. This is important because we set prices to enable them to recover the forecast costs of those plans. Moreover, ongoing inability to meet output measure targets could indicate that the required levels of service, to which we have linked our prices, are not being met and there is a deficiency in the planning and delivery of capital projects.

While meeting output measure targets is important, conclusions about WaterNSW's performance should not be drawn on the basis of whether or not it has met these targets. There may be reasonable explanations why it does not meet targets. In fact, as circumstances evolve over a determination period, changing a target may result in a better outcome for stakeholders. In such cases, the output measures can provide a reference point for articulating changes in priorities.

## B.1 Output measures - 2010 determination period

We set output measures as part of our 2010 Determination.[311] The measures included milestone dates for major projects; the percentage of maintenance jobs reported on the facilities maintenance and management system (FMMS); reporting on existing asset conditions, and environmental output measures to assess fish passage and reduced cold water pollution. Output measures were not specified for recent years given the deferred price review.

Aither assessed WaterNSW's performance against these output measures as part of its expenditure review, and found that output measures in the 2010 determination period have largely been met. And, in areas where measures were not fully met, Aither found these were adequately explained by WaterNSW. This included where there were issues with the output measures themselves, or where WaterNSW had made strategic decisions to defer works to reduce costs or improve delivery.[312]

Aither found output measures were generally met but with delays in some cases. For example, in most cases WaterNSW successfully delivered on dam safety output measures but not always within the specified time. Similarly, the results reported for the FMMS output measures showed relatively good performance, but with high backlogs in some years.[313]

311 IPART, *Review of bulk water charges for State Water Corporation - From 1 July 2010 to 30 June 2014 – Final Report*, June 2010, Appendix D, pp 210-213.
312 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p x.
313 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p xxi.

With respect to the fish passage output measure, Aither found that while there had been a gradual increase in the total length of river open to fish, many of the associated output targets were not met.[314]

In some cases, Aither considered there were issues with the output measures themselves. For example, the cold water pollution output measure did not appear practically achievable.

## B.2 Output measures - 2017 Determination

Table B.1 below lists our draft output measures for the 2017 Determination. These have been developed based on advice from Aither, our expenditure review consultants, and refined in consultation with WaterNSW. In developing the output measures, Aither gave consideration to:

- past output measures, including any that should be continued
- issues raised in its expenditure review, including broad and project-specific issues, and any that may need monitoring to ensure they are addressed
- specific project-based outcomes that would be expected from the expenditure, and
- dam safety issues.[315]

Some of the output measures relate to capital expenditure projects achieving objectives set out in the business case for the expenditure.

314 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p xxi.
315 Aither, *WaterNSW Expenditure Review Final Report*, February 2017, p 19.

**Table B.1 Draft output measures for 2017 Determination**

| Project or area | Proposed output measure | Proposed target completion | Rationale and further detail |
|---|---|---|---|
| Asset renewals and condition | Report on:<br>▼ Service orders requiring reactive maintenance, broken down by asset sub-types.<br>▼ Number of assets with a criticality rating of 4 or above, broken down by asset sub-types. | Report annually | This would provide information to help inform WaterNSW forecasting, as well as give confidence to reviewers about asset condition and expenditure requirements. |
| WaterNSW Enterprise Resource Planning (ERP) | Ceased use of legacy information/ERP systems. | 1 July 2020 | Realisation of benefits that the business case for this project in part relied upon. |
| Regulatory Health and Safety expenditure by valley on 'Renewals – Safety' | WHS risks lowered to As Low As Reasonably Practicable (ALARP), providing a safe working environment for staff, reducing risk to the public, and maintaining operability. | 30 June 2020 | Realisation of benefits that the business case for by valley 'Renewals – Safety' projects in part relied upon. This measure would be difficult to quantify so can be reported against qualitatively. |
| Keepit Dam | Completion of works meeting the stated needs & requirements. | 30 June 2020 | Measure of WaterNSW performance with executing major projects (this relates to the delivery of the project). |
| Keepit Dam safety project | Life safety risk position from Keepit Dam reduced to below ANCOLD Limit of Tolerability for societal risk (ANCOLD Guidelines on Risk Assessment Figure 7.4). | 30 June 2020 | This was argued by WaterNSW as a key rationale for undertaking the works. The output measure is designed to ensure the required risk reduction outcome is achieved. |
| Future Dam Safety capital works strategy | Following expected changes in dam safety regulations, formulate a medium term (5-10 year) plan of capital works required. | 24 months following confirmation of applicable dam safety regulations in NSW | Develop a coherent long term plan for capital investment for dams. |

# C Annual reviews

Below we outline our approach to annual reviews of prices within the 2017 Determination period for the MDB valleys and the coastal valleys separately, given that our regulation of prices within each of these operational areas is subject to different requirements and legislation (as discussed in Chapter 2).

## C.1 MDB valleys

As discussed in Chapter 2, we are accredited by the ACCC to set bulk water prices for MDB valleys in line with the Water Charge (Infrastructure) Rules 2010 (WCIR) and ACCC Pricing Principles.[316] Under the WCIR, we are required to set a four year determination period and to undertake an annual review of prices for MDB valleys.[317]

Given our obligations under the WCIR, we will undertake annual price reviews of WaterNSW's MDB valleys following applications by WaterNSW.[318]

The annual price review process requires us to vary regulated charges to the extent that such variation is reasonably necessary having regard to changes in demand or consumption forecasts and price stability.[319]

In its 2014 Decision, the ACCC determined charges for 2014-15 and included a formula to calculate charges for 2015-16 and 2016-17 for MDB valleys, which allows for an update in forecast entitlements and usage, and the inclusion of the unders and overs mechanism (UOM).[320]

Under the ACCC 2014 Decision, the annual price review for MDB valleys involved updating prices for the upcoming year, by valley, for the:

- expected number of entitlements issued for the valley in that year (for updating entitlement charges)
- expected water usage for the valley in that year based on the 20-year rolling average of past water usage (for updating usage charges)

316 Reference to the Murray-Darling Basin (MDB) valleys also includes the Fish River Scheme (excluding Oberon and Lithgow Councils).

317 See WCIR, Part 1(3) and Part 6, Division 3.

318 The WCIR (Part 6, Division 3) provide for the annual review of regulated charges for second or subsequent years of a regulatory period following an application by the infrastructure operator. The application must include the operator's forecast of demand for, or consumption of, services for the year to which the application relates; the operator's estimate of demand or consumption during the current year; information about how the forecast and estimate were calculated; and proposed regulated charges in respect of the year to which the application relates. The regulator may request the operator to provide further information relating to an application.

319 See WCIR, rule 37(2).

320 ACCC, *Final Decision on State Water Pricing Application: 2014-15 to 2016-17*, June 2014, pp 68-77.

- calculated allowance for the UOM (using the balance from the previous year multiplied by WaterNSW's WACC).[321]

The updated factors were then used to update prices by valley accounting for the:

- tariff structure applied in each valley
- nominal revenue allowance for each valley for that year
- water sharing plan and average water allocation ratios for each valley (which are used to determine the high security premiums).[322]

For the 2017 Determination, in calculating prices for 2018-19, 2019-20 and 2020-21, we intend to apply the same annual review approach as previously used by the ACCC. However, we would no longer update prices to reflect the balance of the UOM as we have decided to discontinue the UOM (see section 8.2).[323]

Annual price reviews for MDB valleys would therefore involve updating prices for the upcoming year, by valley, for the:

- expected number of entitlements issued for the valley in that year (for updating entitlement charges)
- expected water usage for the valley in that year based on the 20-year rolling average of past water usage (for updating usage charges).

In updating prices, we would also account for the:

- tariff structure applied in each valley
- nominal revenue allowance for each valley for that year
- water sharing plan and average water allocation ratios for each valley (which are used to determine the high security premiums).

We intend to use the formulas presented in Box C.1 to Box C.3 as part of the annual review process to determine charges for WaterNSW.

321 The UOM was only applied in valleys at full cost recovery.
322 ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 68-77.
323 We have also decided to discontinue the UOM for MDBA and BRC charges (see section 8.1).

**Box C.1 Calculation of charges for MDB valleys, excluding Fish River Scheme**

In valley $i$, at time $t$, the allowed charges are:

a) For high-security entitlements ($/ML of entitlement):

$$HSEC_{i,t} = \frac{SF_{i,t} \times Share \times Rev_{i,t}^{NRR}}{(SF_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

b) For general-security entitlements ($/ML of entitlement):

$$GSEC_{i,t} = \frac{Share \times Rev_{i,t}^{NRR}}{(SF_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

c) For usage ($/ML):

$$UC_{i,t} = \frac{(1 - Share) \times Rev_{i,t}^{NRR}}{EWU_{i,t}}$$

The terms used in the above formulas are defined in Table C.1.

**Source:** ACCC, *ACCC Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 68-69, and IPART analysis.

**Table C.1 Description of terms used in formulas for calculation of charges for MDB valleys, excluding Fish River Scheme**

| Definitions | |
|---|---|
| $i$ | Valley: Border, Gwydir, Namoi, Lachlan, Macquarie, Murray, and Murrumbidgee. |
| $t$ | Year: 2017-18, 2018-19, 2019-20, and 2020-21. |
| $SF_{i,t}$ | Security factor for valley $i$, in year $t$. |
| $Share$ | The share of entitlement charges in WaterNSW's tariff structure for valley $i$. |
| $Rev_{i,t}^{NRR}$ | The component of the (nominal) notional revenue requirement to be recovered from WaterNSW customers (ie, customer share of NRR) for valley $i$, in year $t$, given by the Building Block Model at the start of the regulatory period. |
| $EHSE_{i,t}$ | The expected number of high-security entitlements issued for valley $i$, in year $t$. |
| $EGSE_{i,t}$ | The expected number of general-security entitlements issued for valley $i$, in year $t$. |
| $EWU_{i,t}$ | The expected water usage for valley $i$, in year $t$, based on a 20-year moving average of past water usage. |
| $HSEC_{i,t}$ | High security entitlement charge for valley $i$, in year $t$. |
| $GSEC_{i,t}$ | General security entitlement charge for valley $i$, in year $t$. |
| $UC_{i,t}$ | Usage charge for valley $i$, in year $t$. |

**Source:** ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 68-69; IPART analysis.

## Box C.2 Calculation of charges for Fish River Scheme

At time $t$, the allowed charges are:

a) For the MAQ charge ($/kl):

$$MAQC_t^{Raw} = \frac{MAQShare_t \times RawShare_t \times Rev_t^{NRR}}{(MAQMajor_t^{Raw} + DeemedMAQMinor_t^{Raw} + ExcessUsage_t^{Raw})}$$

AND

$$MAQC_t^{Filter} = \frac{MAQShare_t \times (1 - RawShare_t) \times Rev_t^{NRR}}{\left(MAQMajor_t^{Filter} + DeemedMAQMinor_t^{Filter} + ExcessUsage_t^{Filter}\right)}$$

b) For the usage charge ($/kl):

$$UC_t^{Raw} = \frac{(1 - MAQShare_t) \times RawShare_t \times Rev_t^{NRR}}{(UsageMajor_t^{Raw} + ExcessUsageMinor_t^{Raw} + NonExcessUsage_t^{Raw})}$$

AND

$$UC_t^{Filter} = \frac{(1 - MAQShare_t) \times (1 - RawShare_t) \times Rev_t^{NRR}}{(UsageMajor_t^{Filter} + ExcessUsageMinor_t^{Filter} + NonExcessUsage_t^{Filter})}$$

The terms used in the above formulas are defined in Table C.2.

**Note:** For the Fish River Scheme, prices are recovered via minimum annual quantity (MAQ) and usage charges which differ from the charges applied in MDB valleys. These MAQ and usage charges are updated annually using expected MAQ and usage above and below the MAQ.

**Source:** ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 72-75; IPART analysis.

**Table C.2 Description of terms used in formulas for calculation of charges for Fish River Scheme**

| Definitions | |
|---|---|
| $t$ | Year: 2017-18, 2018-19, 2019-20, and 2020-21. |
| $Rev_{i,t}^{NRR}$ | The component of the (nominal) notional revenue requirement to be recovered from WaterNSW customers (ie, customer share of NRR) for Fish River water type $i$ = Raw, Filter, in year $t$, given by the Building Block Model at the start of the regulatory period. |
| $MAQShare_t$ | Is the share of total Fish River allowed revenue recovered in the MAQ charges in year $t$ |
| $RawShare_t$ | Is the share of the total Fish River allowed revenue recovered from raw water customers in year $t$ |
| $MAQMajor_t^i$ | Is the total MAQ of the major customers of water of type $i$=Raw, Filtered, in year $t$. |
| $UsageMajor_t^i$ | Is the total expected usage of the major customers of water of type $i$=Raw, Filtered, in year $t$. |
| $DeemedMAQMinor_t^i$ | Is the deemed MAQ of the minor customers of water of type $i$=Raw, Filtered, in year $t$ (equal to 200 times the number of minor customers). |
| $ExcessUsage_t^i$ | Is the total expected usage in excess of the MAQ for customers of water of type $i$=Raw, Filtered, in year $t$. |
| $NonExcessUsageMinor_t^i$ | Is the total expected usage below the deemed MAQ for minor customers of water of type $i$=Raw, Filtered, in year $t$. |
| $MAQC_t^{Filter}$ | MAQ charge for filtered water in year $t$ |
| $MAQC_t^{Raw}$ | MAQ charge for raw water in year $t$ |
| $UC_t^{Filter}$ | Usage charge for filtered water in year $t$ |
| $UC_t^{Raw}$ | Usage charge for raw water in year $t$ |

**Source:** ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 72-75; IPART analysis.

**Box C.3 Calculation of MDBA and BRC charges**

In valley $i$, at time $t$, the allowed charges are:

c) For high-security entitlements ($/ML of entitlement):

$$HSEC_{i,t}^{AC} = \frac{SF_{i,t} \times Share \times Rev_{i,t}^{AC}}{\left(SF_{i,t} \times EHSE_{i,t} + EGSE_{i,t}\right)}$$

d) For general-security entitlements ($/ML of entitlement):

$$GSEC_{i,t}^{AC} = \frac{Share \times Rev_{i,t}^{AC}}{\left(SF_{i,t} \times EHSE_{i,t} + EGSE_{i,t}\right)}$$

e) For usage ($/ML):

$$UC_{i,t}^{AC} = \frac{(1 - Share) \times Rev_{i,t}^{AC}}{EWU_{i,t}}$$

The terms used in the above formulas are defined in Table C.3Table C.1.

**Source:** ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 75-77; IPART analysis.

**Table C.3 Description of terms used in formulas for calculation of MDBA and BRC charges**

| Definitions | |
|---|---|
| $i$ | Valley: Border, Murray, and Murrumbidgee. |
| $t$ | Year: 2017-18, 2018-19, 2019-20, and 2020-21. |
| $SF_{i,t}$ | Security factor for valley $i$, in year $t$. |
| $Share$ | The share of entitlement charges in WaterNSW's MDBA/BRC tariff structure for valley $i$. |
| $Rev_{i,t}^{AC}$ | The MDBA/BRC component of the (nominal) r notional revenue requirement to be recovered from WaterNSW customers (ie, customer share of NRR) for valley $i$, in year $t$, given by the Building Block Model at the start of the regulatory period. |
| $EHSE_{i,t}$ | The expected number of high-security entitlements issued for valley $i$, in year $t$. |
| $EGSE_{i,t}$ | The expected number of general-security entitlements issued for valley $i$, in year $t$. |
| $EWU_{i,t}$ | The expected water usage for valley $i$, in year $t$, based on a 20-year moving average of past water usage. |
| $HSEC_{i,t}^{AC}$ | High security entitlement charge for valley $i$, in year $t$. |
| $GSEC_{i,t}^{AC}$ | General security entitlement charge for valley $i$, in year $t$. |
| $UC_{i,t}^{AC}$ | Usage charge for valley $i$, in year $t$. |

**Source:** ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 75-77; IPART analysis.

## C.2 Coastal valleys

As discussed in Chapter 3, we have decided on a four year determination period, from 1 July 2017 to 30 June 2021 for coastal valleys that are regulated under the IPART Act.[324]

We will not undertake annual reviews of WaterNSW's prices in the coastal valleys. Unlike the WCIR, the IPART Act does not require annual reviews. WaterNSW did not propose an annual review process for the coastal valleys in its pricing proposal.

Other stakeholders that commented on the approach to annual price reviews in their submissions to our Issues Paper considered that annual reviews should not be extended to coastal valleys, as this would result in additional costs for coastal valleys and uncertainty for customers around future regulated water charges.[325,326]

We consider that the costs of undertaking annual reviews that would meet the requirements for a pricing review under the IPART Act would likely outweigh the benefits.

[324] Coastal valleys include the Hunter, North Coast and South Coast valleys, as well as the Oberon and Lithgow Councils.
[325] Bega Valley Users Association submission to IPART Issues Paper, October 2016, pp 7-8.
[326] NSW Irrigators' Council submission to IPART Issues Paper, October 2016, p 15.

# D Peel valley

In this section we examine prices for WaterNSW's bulk rural water services in the Peel valley and address the specific issues raised by stakeholders regarding prices in the Peel valley.

## D.1 Historical prices in the Peel valley

In line with the National Water Initiative (NWI) and other intergovernmental agreements, IPART sets prices with a focus of achieving full cost recovery. However, in the past, cost recovery has been a central issue in some valleys, including the Peel valley. To mitigate the price impacts on customers, while still maintaining the principle of cost reflective prices, IPART and the ACCC transitioned towards cost reflective prices over several determination periods. More recently:

- we **capped bill increases at 10%** per annum in real terms in our 2010 Determination,[327] and
- the ACCC **capped bill increases at 10%** per annum in real terms in its 2014 Decision.[328]

The Peel valley achieved full cost recovery in 2016-17.

We set prices at a valley level to ensure that water customers face the full customer share of efficient costs of the delivery of bulk water services in each valley. This, in turn, ensures the efficient use of water infrastructure and resources.

## D.2 Stakeholder submissions

Submissions to our Issues Paper that commented on prices in the Peel valley generally focused on the disparity between prices paid by users in the Peel valley and users in other Murray-Darling Basin (MDB) valleys.

### D.2.1 Peel Valley Water Users Association

Peel Valley Water Users Association (PVWUA) made a submission to our Issues Paper highlighting the discrepancy between the:[329]

- large number of general security entitlements (which must pay the fixed charge) and the small extraction limit set in the Water Sharing Plan, and
- prices in the Peel valley compared to prices in other MDB valleys.

327 IPART, *Review of bulk water charges for State Water Corporation: From 1 July 2010 to 30 June 2014 – Final Report,* June 2010, pp 149-151.
328 ACCC, *Final Decision on State Water Pricing Application 2014-15 – 2016-17*, June 2014, pp 11-13.
329 Peel Valley Water Users Association submission to IPART Issues Paper, October 2016.

PVWUA stated:

> We contend that the water usage charges in the Peel Valley as proposed above compared to every other valley in the Murray Darling Basin are:
>
> - unfair,
> - inequitable,
> - and anti-competitive
>
> … undeniably 'perverse'[330]

PVWUA has requested IPART explain how the proposed prices, if approved by IPART for the 2017 Determination, are:[331]

- not perverse,
- not price gouging by WaterNSW, and
- encouraging competition relative to other valleys in the MDB.

### D.2.2 Tamworth Regional Council

In its submission to our Issues Paper, Tamworth Regional Council (TRC) has argued for postage stamp pricing (ie, uniform pricing) for bulk water within NSW. [332] To support its argument, it raised the following points:

- Postage stamp pricing can resolve the debate about how much users in a downstream valley (eg, Namoi valley) should pay for **supplementary water** that was the result of flows from the Peel valley. Similarly, postage stamp pricing can resolve the debate about how much environmental water holders in an upstream valley should pay for environmental flows released for **environmental** (water shepherding) purposes in a downstream valley.
- Peel valley users should not be penalised for the **historical decision to build a small capacity dam** (legacy issues).
- IPART has **allowed for postage stamp pricing for groundwater** in the Murray Darling Basin (excluding the Murrumbidgee valley).

## D.3 IPART's response

Prices are higher for Peel valley licence holders compared to other MDB valleys. This is primarily because the fixed costs involved in storing and releasing water have to be recovered from a relatively small customer (entitlement and usage) base in the Peel valley. For a given level of cost,[333] the small customer base means that prices per ML would be higher for Peel valley users than users in other valleys with a larger customer base.

330 Peel Valley Water Users Association submission to IPART Issues Paper, October 2016, p 2.
331 Peel Valley Water Users Association submission to IPART Issues Paper, October 2016, pp 2-3.
332 Tamworth Regional Council submission to IPART Issues Paper, October 2016, p 7.
333 In its pricing proposal, WaterNSW noted that the cost of operating a dam is relatively fixed regardless of the size of a dam. WaterNSW pricing proposal to IPART, June 2016, p 30.

We consider that prices in the Peel valley under this draft determination are not perverse, unfair, inequitable or anti-competitive. Rather, we set maximum prices in the Peel valley to reflect customers' share of the **efficient costs** of providing bulk water services in that valley. This ensures customers are faced with the true, efficient costs of the services they receive, which promotes efficient water consumption decisions, and the efficient use and allocation of resources.

Similarly, WaterNSW is not price gouging under our determination, as we set prices to reflect its efficient costs of proving bulk water services in the Peel valley. Indeed, if prices were set lower, then either:

- WaterNSW and its owner (ie, the NSW Government, and ultimately the NSW community) would under-recover costs, and therefore have to make-up the shortfall; or
- Other valleys within NSW would have to pay prices that are higher than the efficient costs of providing services to them (if we moved to postage stamp pricing – as discussed below).

Each of the above options would mean that other parties pay for the delivery of services to bulk water customers in the Peel valley. They would also result in distorted price signals, which would undermine the efficient use and allocation of resources across the community.

We also consider that the prices in the Peel valley do not produce perverse outcomes. As a fundamental pricing principle, prices should be set within the efficient pricing band. The upper limit of this band reflects customers' capacity to pay. Where prices are higher than the upper limit, there is a broad change in customer behaviour. This would include the surrender and return of licences and a clear reduction in water usage. However, despite gradual increases in bills over the past three determination periods to reach FCR,[334] licence numbers and entitlement volumes have remained stable and there has been no observable downward trend in water usage in the Peel valley. This indicates that at cost reflective prices, the total benefit of bulk water services is greater than or equal to the total charges paid in the Peel valley.

In making our decision on WaterNSW's notional revenue requirement (NRR) for Peel valley, we analysed its proposed operating and capital expenditure forecasts for the 2017 Determination. Our decision reflects our view of WaterNSW's total efficient costs in providing its regulated bulk water services over the 2017 Determination. Legacy costs are not included in WaterNSW's NRR. The maximum prices we set are reflective of the customer share of WaterNSW's efficient costs (or NRR), based on the best available information at this point in time.

### D.3.1 Entitlements and extraction limits

There is a mismatch between the entitlement volumes (which users must pay a fixed charge for) and the Long Term Average Annual Extraction Limit (LTAAEL) in the Peel valley. However, both the **volume of entitlements issued and the LTAAEL are not set by IPART**. These are set out in the *Water Sharing Plan for the Peel Valley Regulated, Unregulated, Alluvium and Fractured Rock Water Sources 2010*, as approved by the Minister for Regional Water.

334 10% increase in bills per annum over the 2006, 2010 and 2014 determination period.

### D.3.2 Postage stamp pricing

Given that the cost of supply water can be differentiated between valleys, IPART considers postage stamp pricing is not appropriate for pricing WaterNSW's bulk water services on regulated rivers. Setting a uniform price across MDB valleys (or a move away from valley based pricing to more aggregated pricing in general) would mean that prices are **less cost reflective and less transparent**. In turn, this would mean that:

- Prices would not signal to customers the cost of servicing their locations, thereby distorting location based consumption and investment decisions.
  - Cost reflective prices are important to provide efficient pricing signals to users and subsequently promote the efficient use of water.
- Lower cost valleys would subsidise higher cost valleys – ie, users in some valleys would pay prices that are higher than the efficient costs of supplying services to them, so that users in other valleys can pay prices that are lower than the efficient costs of servicing them.

We also note that cost reflective prices are an important pre-condition for the efficient functioning of the water trading market, particularly with regard to the permanent trading of entitlements. For instance, water entitlement holders are less likely to trade their entitlements to higher value users unless they are faced with the full cost of their water use and the need to then decide whether their business is still economically viable. Over time, a cost reflective pricing structure should see bulk water users adapt their operations to manage the risks associated with any variability in water supply (and hence the risk that in dry seasons they may be faced with high fixed charges for relatively little water) or permanently trade their entitlement to a more economically viable business.

In our 2016 Determination of the Water Administration Ministerial Corporation's (WAMC) maximum water management charges, we set groundwater prices on a regional rather than a valley basis (Coastal and Inland).[335] However, this was because the **structure of cost information collected and provided by DPI Water did not allow for IPART to further geographically disaggregate prices for groundwater**. Moreover, we considered that further disaggregation may increase price volatility between determination periods.[336]

### D.3.3 Usage charges for water intercepted downstream

TRC raised concerns about the usage charge when users downstream from the Peel valley (eg, Namoi valley users) intercept water flows that were released from Chaffey dam. Specifically, TRC noted there are debates about what usage charge should apply to users in:

- a downstream valley for extracting supplementary flows if the supplementary water was the result of flows from a valley upstream, and
- an upstream valley for releasing environmental flows for the purposes of addressing environmental concerns in a valley downstream.

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335 We maintained a separate price for Murrumbidgee groundwater users within the Inland groundwater source. Consistent with previous determinations, these users are subject to a separate price, which is significantly below full cost recovery, and on a glide path to the Inland price.

336 IPART, *Review of prices for the Water Administration Ministerial Corporation: from 1 July 2016 - Final Report*, June 2016, p 94.

A water access licence entitles the holder of a licence to a specified share of available water within a particular water management area or water source.[337] A user's water access licence therefore determines the usage price that the user will be charged. For example, a user that holds a water access licence that entitles them to a specified share of available water in the Namoi valley faces the usage charge we set for the Namoi valley. This applies to both supplementary water and environmental water flows.

We set maximum prices that reflect the efficient costs of WaterNSW's rural bulk water services. The services relate primarily to **storing** and **delivering** water to entitlement holders in each valley. We determine the customer share of capital and operating costs of storing and delivering water in **each valley**, and then (through setting entitlement and usage charges) allocate these costs to customers within the valley according to how many entitlements they hold and how much water they extract. That is, the prices paid by users in the Peel valley reflect WaterNSW's efficient costs of storing and delivering water from Chaffey Dam to users in the Peel valley. Prices paid by users in the Namoi valley reflect WaterNSW's efficient costs of storing and delivering water from Keepit Dam and Split Rock Dam to users in the Namoi valley.

337 DPI Water, *Applying for a new water access licence*, http://www.water.nsw.gov.au/water-licensing/about-licences/new-access-licences accessed on 21 February 2017.

# E Efficiency carryover mechanism

In its pricing proposal, Sydney Water identified that under the current form of regulation the financial reward for making efficiency savings deteriorates over the regulatory period.[338] That is, a saving made in year 1 can be held for four years while a saving made in year 3 can be held for just two years before it is passed on to customers through lower prices.

This can result in an incentive to delay revealing efficiency savings from the end of one regulatory period until the beginning of the next regulatory period. Figure 12.1 illustrates how there can be an incentive to delay efficiency savings and how this can be addressed by an efficiency carryover mechanism (ECM).

**Figure E.1 Problem identified with the current form of regulation**

| | Present value | Regulatory period 1 | | | | Regulatory period 2 | | | | Regulatory period 3 | | | | Terminal value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Panel 1 - Making a saving in year 3 results in the business receiving two years of benefit** | | | | | | | | | | | | | | |
| Year | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| Opex allowance | | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | |
| Actual opex | | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | |
| Profit to business | $16.87 | - | - | 10 | 10 | - | - | - | - | - | - | - | - | |
| Benefit to customers | $159.24 | - | - | - | - | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 200 |
| | $176.10 | | | | | | | | | | | | | |
| **Panel 2 - The business has an incentive to delay making the saving until year 5 so that it can receive four years of benefit** | | | | | | | | | | | | | | |
| Year | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| Opex allowance | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | |
| Actual opex | | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | |
| Profit to business | $29.17 | - | - | - | - | 10 | 10 | 10 | 10 | - | - | - | - | |
| Benefit to customers | $130.06 | - | - | - | - | - | - | - | - | 10 | 10 | 10 | 10 | 200 |
| | $159.24 | | | | | | | | | | | | | |
| **Panel 3 - Under an Efficiency Carryover Mechanism, efficiencies are held for four years before being passed to customers** | | | | | | | | | | | | | | |
| Year | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| Opex allowance | | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | |
| Actual opex | | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | |
| Profit to business | $32.16 | - | - | 10 | 10 | 10 | 10 | - | - | - | - | - | - | |
| Benefit to customers | $143.94 | - | - | - | - | - | - | 10 | 10 | 10 | 10 | 10 | 10 | 200 |
| | $176.10 | | | | | | | | | | | | | |

**Note:** Terminal Value is the present value of the benefit to customers into perpetuity (ie, $10 / discount rate).
**Data source:** IPART analysis using a discount rate of 5%.

- Panel 1: if the business makes a permanent efficiency saving in year 3, it can retain this benefit for two years before it is passed to customers in year 5 through a lower allowance leading to lower prices.
  - The present value to the business is $16.87.
  - The present value to customers is $159.24.
  - While this would be the best outcome for customers, the business may have an incentive to delay the saving in order to hold onto it for longer as shown in the next panel.
- Panel 2: if the business decides to delay this efficiency saving until year 5, it retains the benefit for four years before it is passed to customers in year 9.

338 Sydney Water pricing proposal to IPART, June 2015, p 255.

- The present value to the business is $29.17 (ie, greater than $16.87). Therefore the business may have an incentive to delay this saving.
- Delaying the saving results in waste (ie, it is inefficient because the total present value falls from $176.10 in panel 1 to $159.24 in panel 2).
- Delaying the saving makes customers worse off (ie, the present value to customers falls from $159.24 in panel 1 to $130.06 in panel 2).

- Panel 3: With an ECM in place, the business retains the benefit from an efficiency saving for four years regardless of when the saving is made. In theory, the business will then have an incentive to deliver efficiency savings as soon as possible.
  - The key difference in panel 3 (compared to panel 1) is the allowance remains at $100 in years 5 and 6, allowing the business to retain the saving for four years before it is passed on to customers.
  - The present value to the business is $32.16 (ie, greater than $29.17). With an ECM, the business has an incentive to make the saving as soon as possible.
  - Bringing savings forward makes customers better off (ie, the present value to customers increases from $130.06 in panel 2 to $143.94 in panel 3).
  - Note that under the ECM the total present value ($176.10) is the same as in panel 1. Therefore, removing the incentive to delay savings results in a more efficient outcome.

## E.1 CEPA's efficiency carryover mechanism

We engaged Cambridge Economic Policy Associates (CEPA) to review Sydney Water's proposed efficiency benefit sharing scheme (EBSS), our modified EBSS and other options in light of experiences in other jurisdictions and having regard to the particular circumstances in NSW's urban water sector.[339]

CEPA considered both symmetric and asymmetric options and recommended that we adopt an asymmetric approach. Key features of CEPA's recommended ECM include:

- It applies to controllable operating expenditure (ie, total operating expenditure less bulk water costs). This is consistent with Sydney Water's proposal.
- It does not apply to capex. Although CEPA supports an ECM for capital expenditure in principle, it did not consider there to be evidence of significant substitutability between operating and capital expenditure.[340] Given the additional costs and complexity involved in extending the ECM to include capex, the risk of unintended consequences (ie, over forecasting and inefficient deferral of capex), and the limited potential for substitutability between operating and capital expenditure, CEPA recommended that we not apply the ECM to capex at this time.

339 CEPA, Advice on Efficiency Carryover Mechanisms, February 2016. Available online: https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-legislative-requirements-water-metropolitan-water-sydney-water-corporation-pricing-investigation-commencing-from-1-july-2016/consultant_report_-_cepa_-_advice_on_efficiency_carryover_mechanisms_-_february_2016.pdf.

340 Evidenced by Sydney Water's proposal to limit the capital expenditure EBSS to about 9.5% of capital expenditure which it considers to be more recurrent and clearly substitutable with operating expenditure.

- It is an asymmetric mechanism that rewards permanent cost reductions and does not additionally penalise permanent cost increases. A feature of symmetric schemes is that permanent cost increases are retained by the business for a fixed number of years before being passed on to customers. CEPA considers that the regulator should retain discretion to reset expenditure allowances, which would include reviewing permanent cost increases to ensure they are efficient before passing them on to customers. Sydney Water expressed that it is open to the regulator retaining discretion to reset the allowance. We consider this view is more consistent with an asymmetric approach rather than a symmetric approach.
- It ensures permanent efficiency savings are held for four years. Although the ECM would be simplified by allowing savings to be held for five years as per Sydney Water's proposal, CEPA considers that a 4-year holding period provides sufficient incentive for the business to find and deliver cost savings.
- Temporary over and under spends are retained by the business. This is the major difference between the ECM and the modified EBSS and directly addresses Sydney Water's concern with the modified EBSS.

## E.2 Design and operation of the efficiency carryover mechanism

The following four examples show how the ECM is built up from a simple concept to a more complex model capable of handling the fact that we will implement the ECM during year 4 of the determination when we do not know the actual expenditure for that year. Each step builds on the last.

In this section, we also make it clear where we have clarified or extended CEPA's recommended ECM.

Figure E.2 provides a simple worked example. If a permanent saving is made in year 3, the ECM ensures that the business will carry the benefit over into the next regulatory period so that the business gets to retain the benefit for four years.

**Figure E.2 Simple example of how the ECM works**

| | Regulatory Period 1 | | | | Regulatory Period 2 | | | |
|---|---|---|---|---|---|---|---|---|
| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Base allowance | 100 | 100 | 100 | 100 | 80 | 80 | 80 | 80 |
| Actual | 100 | 100 | 80 | 80 | 80 | 80 | 80 | 80 |
| Under (over) | - | - | 20 | 20 | - | - | - | - |
| Outperformance | - | - | 20 | 20 | - | - | - | - |
| Permanent gain | - | - | 20 | 20 | | | | |
| Incremental gain | - | - | 20 | - | | | | |
| ECM calc | | | | | | | | |
| - year 1 | - | - | - | - | | | | |
| - year 2 | | - | - | - | - | | | |
| - year 3 | | | 20 | 20 | 20 | 20 | | |
| - year 4 | | | | - | - | - | - | |
| ECM benefit | | | | | 20 | 20 | - | - |
| Total allowance | 100 | 100 | 100 | 100 | 100 | 100 | 80 | 80 |
| Total gain (loss) | - | - | 20 | 20 | 20 | 20 | - | - |

**Data source:** IPART analysis.

The ECM involves the following steps:

- Under (over): this gives the difference between the base allowance and actual expenditure.
- Outperformance: is the same as the under (over) when this is an under-spend and is zero when the under (over) is an over-spend.
- Permanent gain: working backwards from year 4 to year 1, this calculates how much of the outperformance in year 4 also occurred in year 3; how much of the outperformance that occurred in both years 4 and 3 also occurred in year 2; and how much of this outperformance that occurred in years 4, 3, and 2 also occurred in year 1.
- Incremental gain: working forwards from year 1 to 4, this calculates the first year that a permanent saving occurred. It is the 'incremental gain' that the ECM ensures is carried forward for four years.
- ECM calculations: ensures that any incremental gain is held for four years.
- The regulator retains discretion to reset the base allowance in regulatory period 2. The permanent reduction in expenditure of $20 is factored into the next period's base allowance. In this example, there are no other adjustments to the base allowance in regulatory period 2.

Figure E.3 shows how the ECM is lagged one year to account for the fact that we do not know actual expenditure for the last year of a regulatory period when the ECM is implemented.

**Figure E.3 ECM is lagged one year so that it is based on actuals**

| | | Regulatory Period 1 | | | | Regulatory Period 2 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ECM1 | | | | ECM2 | | | | |
| Year | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Base allowance | 100 | 100 | 100 | 100 | 100 | 80 | 80 | 80 | 80 |
| Actual | 100 | 100 | 100 | 80 | 80 | 80 | 80 | 80 | 80 |
| Under (over) | - | - | - | 20 | - | - | - | - | - |
| Outperformance | - | - | - | 20 | - | - | - | - | - |
| Permanent gain | - | - | - | 20 | | | | | |
| Incremental gain | - | - | - | 20 | | | | | |
| ECM1 calc | | | | | | | | | |
| - year 0 | - | - | - | - | | | | | |
| - year 1 | | - | - | - | - | | | | |
| - year 2 | | | - | - | - | - | | | |
| - year 3 | | | | 20 | 20 | 20 | 20 | | |
| ECM benefit | | | | | | 20 | 20 | - | - |
| Total allowance | | 100 | 100 | 100 | 100 | 100 | 100 | 80 | 80 |
| Total gain (loss) | | - | - | 20 | 20 | 20 | 20 | - | - |

**Data source:** IPART analysis.

In practice, there is a complicating factor. That is, we do not know year 4 actual expenditure when we implement the ECM during the price review (which occurs during year 4). The solution to this problem involves **looking back at four years of actual data**.

- When we implement ECM1 in year 4, we look at the four previous years of actual data (ie, years 0, 1, 2, and 3). This is implicit in CEPA's model. Our presentation of the ECM makes this explicit.

- Figure E.3 shows what happens when a permanent efficiency saving is made in year 3, the benefit is assumed to be held in both years 3 and 4. The ECM ensures that the benefit is carried forward a further two years (years 5 and 6).
- Any further saving made in year 4 will be captured by ECM2. That is, ECM2 will calculate the under (over) spend in year 4 as the lesser of:
  - The base allowance in year 4 minus actual spend in year 4, or
  - The actual spend in year 3 minus the actual spend in year 4.

Figure E.4 shows how the ECM has an adjustment factor to ensure permanent savings made in the last year of the previous determination are only held for four (not five) years.

**Figure E.4 ECM adjustment**

| Real WACC 5% | | Regulatory Period 1 | | | | Regulatory Period 2 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ECM1 | | | | ECM2 | | | | |
| Year | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Base allowance | 100 | 100 | 100 | 100 | 100 | 80 | 80 | 80 | 80 |
| Actual | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Under (over) | 20 | 20 | 20 | 20 | - | - | - | - | - |
| Outperformance | 20 | 20 | 20 | 20 | - | - | - | - | - |
| Permanent gain | 20 | 20 | 20 | 20 | | | | | |
| Incremental gain | 20 | - | - | - | | | | | |
| ECM1 calc | | | | | | | | | |
| - year 0 | 20 | 20 | 20 | 20 | 20 | | | | |
| - year 1 | | - | - | - | - | | | | |
| - year 2 | | | - | - | - | - | | | |
| - year 3 | | | | - | - | - | - | | |
| - year 4 adjustment | | | | | | -21 | | | |
| ECM benefit | | | | | | -21 | - | - | - |
| Total allowance | | 100 | 100 | 100 | 100 | 59 | 80 | 80 | 80 |
| Total gain (loss) | 20 | 20 | 20 | 20 | 20 | - 21 | - | - | - |

**Data source:** IPART analysis.

In this example, a permanent efficiency saving of $20 is made in year 0. Without an adjustment factor, the business would be able to retain this saving for five years.

If this is not corrected, the business may have an incentive to delay savings until the last year of a determination in order to retain a benefit for five years and maximise returns.[341]

Retaining the saving for five years would be inconsistent with the purpose of the ECM of equalising incentives over time. We have therefore decided to include an adjustment term to ensure efficiency savings are retained for four years.

ECM1 has an adjustment term ('year 4 adjustment') which, in this case, offsets the fifth year of benefit (received in year 4) with a corresponding negative adjustment to the allowance in the first year of the next regulatory period (ie, year 5). We have adjusted the formula used by CEPA to be clear that the adjustment factor only applies when a permanent efficient saving made in year 0. This is consistent with the intent of CEPA's adjustment factor.

341 This incentive already exists under the current form of regulation and is precisely the incentive the ECM is designed to remove.

Note that we are inflating this adjustment term by the WACC[342] in order to ensure incentives are fully equalised (assuming the WACC represents whatever benefit the business receives from the additional 5th year cash flow in year 4). This is an extension to CEPA's model. CEPA recognised and discussed the effect of the time value of money, but, for simplicity, did not include time value of money adjustments in its recommended model.

The adjustment term recognises when a permanent efficiency saving is made in year 0. Because the business receives this benefit for five years (years 0, 1, 2, 3, and 4), the adjustment term inflates the fifth year of this benefit (received in year 4) by the WACC and returns to its customers in year 5.

Given permanent savings made in year 4 are not observed by the regulator and consequently could be held for five years, we include an adjustment to the carryover calculation that claws back 1-year worth of benefit for savings made in year 4 of the previous determination period.

## E.3 Initial application of efficiency carryover mechanism

In response to our Draft Report, Sydney Water argued that the ECM should apply prospectively from 1 July 2016 and should therefore exclude 2015-16 expenditure when it is applied at the next review.

We agree with Sydney Water that incentive mechanisms should apply prospectively not retrospectively. That is, there is little point applying an incentive mechanism to something that has already happened. We also note that Sydney Water made efficiency savings during the last regulatory period which we have factored into the allowance going forward. If we include 2015-16 expenditure in the initial application of the ECM, we risk double counting efficiency savings made before 2015-16.

Therefore, we have decided to limit the initial application of the ECM in 2019-20 to three years from 2016-17 to 2018-19. The implication is that there will be no need for an adjustment factor for the initial application of the ECM because any under spend that occurs in 2015-16 will not be included in the mechanism. All subsequent applications of the ECM would apply to the four years immediately preceding that application. For example, the second application of the ECM would occur in 2023-24 and would apply to the four years from 2019-20 to 2022-23. This is shown in Figure E.5 below.

342 If cash flows are assumed to occur at the end of each year, this should be the nominal WACC calculated for regulatory period 2.

**Figure E.5 Initial application of ECM**

| Real WACC 5% | | Regulatory Period 2016 | | | | Regulatory Period 2020 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ECM 1 | | | ECM2 | | | | |
| Year | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| Base allowance | | 100 | 100 | 100 | 100 | 80 | 80 | 80 | 80 |
| Actual | | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Under (over) | | 20 | 20 | 20 | - | - | - | - | - |
| Outperformance | | 20 | 20 | 20 | - | - | - | - | - |
| Permanent gain | | 20 | 20 | 20 | | | | | |
| Incremental gain | | 20 | - | - | | | | | |
| ECM1 calc | | | | | | | | | |
| - 2016-17 | | 20 | 20 | 20 | 20 | - | | | |
| - 2017-18 | | | - | - | - | - | - | | |
| - 2018-19 | | | | - | - | - | - | | |
| ECM benefit | | | | | | - | - | - | - |
| Total allowance | | 100 | 100 | 100 | 100 | 80 | 80 | 80 | 80 |
| Total gain (loss) | | 20 | 20 | 20 | 20 | - | - | - | - |

**Data source:** IPART analysis.

## E.4 Measuring outperformance in year four

Although this does not affect ECM1 which does not apply to 2015-16, we consider it important to be clear about how outperformance would be measured in year four of the next regulatory period (ie, 2019-20) which would be the first year included in ECM2.

Generally, outperformance in a year is measured relative to the base allowance in that year. However, if a permanent efficiency saving is identified and included in ECM1, we have to take this into account to ensure the same saving isn't also included in ECM2.

Therefore, outperformance in 2019-20 would be measured against the base allowance less any permanent efficiency identified and included in ECM1.

## E.5 Reasons for not applying the efficiency carryover mechanism to capex

A potential side-effect of introducing a rolling incentive mechanism is that it can change the relationship between operating and capital expenditure. On the face of it, there is an argument to introduce ECMs for both operating and capital expenditure on the grounds that this will balance incentives and trade-offs between operating and capital expenditure. However, we have decided to limit the ECM to apply only to operating expenditure at this time for the following reasons:

- The rationale behind rolling incentive mechanisms like the EBSS and ECM is that businesses have an incentive to delay cost savings because, once revealed, this information will be used to reduce the allowance in the next period. It is clear how this rationale applies to operating expenditure, which is relatively stable over time. It is less clear how this rationale applies to capital expenditure, which can vary over time as capex plans are delayed or accelerated. A reduction in capex could be a deferral or an efficiency saving, it is difficult to know.
- Applying the ECM to a small portion of capital expenditure is problematic because it could result in inefficient cost shifting for the purpose of generating benefits through the mechanism.
- We consider that introducing an ECM for capital expenditure would strengthen the incentive to over forecast and inefficiently defer capital expenditure. Due to asymmetric information, it is difficult to distinguish between efficiency savings and deferrals. Due to the lag between capital expenditure deferral and the resulting deterioration in service standards, it can be difficult to distinguish between efficient and inefficient deferrals.
- The relationship between operating and capital expenditure is influenced by a range of factors.[343] The premise that operating and capital expenditure incentives will be balanced by applying the same mechanisms to both may not hold in practice and there may be better approaches available to achieve this outcome. For example, balancing incentives for operating and capital expenditure solutions was a major reason in Ofwat's decision to move away from separate operating and capital expenditure allowances (and rolling incentive mechanisms) and to adopt a total expenditure approach.[344]
- The potential risk of introducing an operating expenditure ECM and not a capital expenditure ECM is that businesses could have an incentive to increase capital expenditure in order to reduce operating expenditure late in the determination period. We consider this risk is limited by ex-post capital expenditure reviews that assess whether increases in capex are prudent and efficient.

## E.6 Examples of how the efficiency carryover mechanism would apply under various scenarios

343 Including the extent of substitutability between opex and capex, the actual cost of capital relative to the allowed WACC, governance frameworks, and management incentives.

344 Ofwat, *Setting price controls for 2015-20 – Final methodology and expectations for companies' business plans*, July 2013, pp 18-19. http://www.ofwat.gov.uk/wp-content/uploads/2015/11/pap_pos201307finalapproach.pdf

**Example 1 of 6: When a permanent saving is made in year 1 (2016-17)**

- The saving is made in year 1 of the regulatory period. There is no additional carryover benefit under the ECM. The business retains the saving for four years.

| Input Values | |
|---|---|
| WACC | 5% |
| Base allowance RP2016 | 100 |
| Base allowance RP2020 | 90 |
| Base allowance RP2024 | 90 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Regulatory Period | RP2012 | | | | RP2016 | | | | RP2020 | | | | RP2024 | | | |
| | Efficiency Carryover Mechanism | | | | | ECM1 | | | | ECM2 | | | | ECM3 | | | |
| ROW | Year | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| 1 | Base allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| 2 | Actual expenditure | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| 3 | ECM1 Gain (loss) | | | | | 10 | 10 | 10 | | | | | | | | | |
| 4 | ECM1 Out performance | | | | | 10 | 10 | 10 | | | | | | | | | |
| 5 | ECM1 Permanent gain | | | | | 10 | 10 | 10 | | | | | | | | | |
| 6 | ECM1 Incremental gain | | | | | 10 | - | - | | | | | | | | | |
| 7 | ECM1 ECM calculations | | | | | | | | | | | | | | | | |
| 8 | ECM1 - 2015-16 | | | | | | | | | | | | | | | | |
| 9 | ECM1 - 2016-17 | | | | | 10 | 10 | 10 | 10 | | | | | | | | |
| 10 | ECM1 - 2017-18 | | | | | | - | - | - | - | | | | | | | |
| 11 | ECM1 - 2018-19 | | | | | | | - | - | - | - | | | | | | |
| 12 | ECM1 - 2019-20 adjustment | | | | | | | | | | | | | | | | |
| 13 | **ECM1 benefit** | | | | | | | | | - | - | | | | | | |
| 14 | ECM2 Gain (loss) | | | | | | | | - | - | - | - | | | | | |
| 15 | ECM2 Out performance | | | | | | | | - | - | - | - | | | | | |
| 16 | ECM2 Permanent gain | | | | | | | | - | - | - | - | | | | | |
| 17 | ECM2 Incremental gain | | | | | | | | - | - | - | - | | | | | |
| 18 | ECM2 ECM calculations | | | | | | | | | | | | | | | | |
| 19 | ECM2 - 2019-20 | | | | | | | | - | - | - | - | - | | | | |
| 20 | ECM2 - 2020-21 | | | | | | | | | - | - | - | - | | | | |
| 21 | ECM2 - 2021-22 | | | | | | | | | | - | - | - | - | | | |
| 22 | ECM2 - 2022-23 | | | | | | | | | | | - | - | - | - | | |
| 23 | ECM2 - 2023-24 adjustment | | | | | | | | | | | | | - | | | |
| 24 | **ECM2 benefit** | | | | | | | | | | | | | - | - | | |
| 25 | Total allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| 26 | Total gain / loss | - | - | - | - | 10 | 10 | 10 | 10 | - | - | - | - | - | - | - | - |

**Source:** IPART analysis.

### Example 2 of 6: When a saving is made in year 2 (2017-18)

- The saving is made in year 2 of the regulatory period. The ECM carries the benefit forward one year into the next regulatory period (ie, the benefit is carried forward to 2020-21). The business retains the saving for four years.

| Input Values | |
|---|---|
| WACC | 5% |
| Base allowance RP2016 | 100 |
| Base allowance RP2020 | 90 |
| Base allowance RP2024 | 90 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Regulatory Period | RP2012 | | | | RP2016 | | | | RP2020 | | | | RP2024 | | | |
| | Efficiency Carryover Mechanism | | | | | ECM1 | | | | ECM2 | | | | ECM3 | | | |
| ROW | Year | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| 1 | Base allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| 2 | Actual expenditure | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| 3 | ECM1 Gain (loss) | | | | | - | 10 | 10 | | | | | | | | | |
| 4 | ECM1 Out performance | | | | | - | 10 | 10 | | | | | | | | | |
| 5 | ECM1 Permanent gain | | | | | - | 10 | 10 | | | | | | | | | |
| 6 | ECM1 Incremental gain | | | | | - | 10 | - | | | | | | | | | |
| 7 | ECM1 ECM calculations | | | | | | | | | | | | | | | | |
| 8 | ECM1 - 2015-16 | | | | | | | | | | | | | | | | |
| 9 | ECM1 - 2016-17 | | | | | - | - | - | - | | | | | | | | |
| 10 | ECM1 - 2017-18 | | | | | | 10 | 10 | 10 | 10 | | | | | | | |
| 11 | ECM1 - 2018-19 | | | | | | | - | - | - | - | | | | | | |
| 12 | ECM1 - 2019-20 adjustment | | | | | | | | | | | | | | | | |
| 13 | **ECM1 benefit** | | | | | | | | | **10** | - | | | | | | |
| 14 | ECM2 Gain (loss) | | | | | | | | - | - | - | - | | | | | |
| 15 | ECM2 Out performance | | | | | | | | - | - | - | - | | | | | |
| 16 | ECM2 Permanent gain | | | | | | | | - | - | - | - | | | | | |
| 17 | ECM2 Incremental gain | | | | | | | | - | - | - | - | | | | | |
| 18 | ECM2 ECM calculations | | | | | | | | | | | | | | | | |
| 19 | ECM2 - 2019-20 | | | | | | | | - | - | - | - | - | | | | |
| 20 | ECM2 - 2020-21 | | | | | | | | | - | - | - | - | | | | |
| 21 | ECM2 - 2021-22 | | | | | | | | | | - | - | - | - | | | |
| 22 | ECM2 - 2022-23 | | | | | | | | | | | - | - | - | - | | |
| 23 | ECM2 - 2023-24 adjustment | | | | | | | | | | | | | - | | | |
| 24 | **ECM2 benefit** | | | | | | | | | | | | | - | - | | |
| 25 | Total allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| 26 | Total gain / loss | - | - | - | - | - | 10 | 10 | 10 | 10 | - | - | - | - | - | - | - |

**Source:** IPART analysis.

**Example 3 of 6: When a saving is made in year 3 (2018-19)**

- The saving is made in year 3 of the regulatory period. The ECM carries the benefit over two years into the next regulatory period. The business keeps the saving for four years.

| Input Values | |
|---|---|
| WACC | 5% |
| Base allowance RP2016 | 100 |
| Base allowance RP2020 | 90 |
| Base allowance RP2024 | 90 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Regulatory Period | RP2012 | | | | RP2016 | | | | RP2020 | | | | RP2024 | | | |
| | Efficiency Carryover Mechanism | | | | | ECM1 | | | | ECM2 | | | | ECM3 | | | |
| ROW | Year | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| 1 | Base allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| 2 | Actual expenditure | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| 3 | Gain (loss) | | | | | - | - | 10 | | | | | | | | | |
| 4 | Out performance | | | | | - | - | 10 | | | | | | | | | |
| 5 | Permanent gain | | | | | - | - | 10 | | | | | | | | | |
| 6 | Incremental gain | | | | | - | - | 10 | | | | | | | | | |
| 7 | ECM calculations | | | | | | | | | | | | | | | | |
| 8 | - 2015-16 | | | | | | | | | | | | | | | | |
| 9 | - 2016-17 | | | | | - | - | - | - | | | | | | | | |
| 10 | - 2017-18 | | | | | | - | - | - | - | | | | | | | |
| 11 | - 2018-19 | | | | | | | 10 | 10 | 10 | 10 | | | | | | |
| 12 | - 2019-20 adjustment | | | | | | | | | | | | | | | | |
| 13 | **ECM1 benefit** | | | | | | | | | **10** | **10** | | | | | | |
| 14 | Gain (loss) | | | | | | | | - | - | - | - | | | | | |
| 15 | Out performance | | | | | | | | - | - | - | - | | | | | |
| 16 | Permanent gain | | | | | | | | - | - | - | - | | | | | |
| 17 | Incremental gain | | | | | | | | - | - | - | - | | | | | |
| 18 | ECM calculations | | | | | | | | | | | | | | | | |
| 19 | - 2019-20 | | | | | | | | - | - | - | - | - | | | | |
| 20 | - 2020-21 | | | | | | | | | - | - | - | - | | | | |
| 21 | - 2021-22 | | | | | | | | | | - | - | - | - | | | |
| 22 | - 2022-23 | | | | | | | | | | | - | - | - | - | | |
| 23 | - 2023-24 adjustment | | | | | | | | | | | | | - | | | |
| 24 | **ECM2 benefit** | | | | | | | | | | | | | - | - | | |
| 25 | Total allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 |
| 26 | Total gain / loss | - | - | - | - | - | - | 10 | 10 | 10 | 10 | - | - | - | - | - | - |

**Source:** IPART analysis.

### Example 4 of 6: When a saving is made in year 4 (2019-20)

- The saving is made in year 4 of the regulatory period. The business keeps this saving for five years. However, the ECM returns the fifth year of saving (after adjusting this amount by the WACC) to customers in year 1 of the next determination period (ie, 2024-25).

| Input Values | |
|---|---|
| WACC | 5% |
| Base allowance RP2016 | 100 |
| Base allowance RP2020 | 100 |
| Base allowance RP2024 | 90 |

| | ROW | | RP2012 | | | | RP2016 | | | | RP2020 | | | | RP2024 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Regulatory Period | | | | | | | | | | | | | | | | |
| | | Efficiency Carryover Mechanism | | | | | ECM1 | | | | ECM2 | | | | ECM3 | | | |
| | | Year | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| | 1 | Base allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 |
| | 2 | Actual expenditure | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| ECM1 | 3 | Gain (loss) | | | | | - | - | - | | | | | | | | | |
| ECM1 | 4 | Out performance | | | | | - | - | - | | | | | | | | | |
| ECM1 | 5 | Permanent gain | | | | | - | - | - | | | | | | | | | |
| ECM1 | 6 | Incremental gain | | | | | - | - | - | | | | | | | | | |
| ECM1 | 7 | ECM calculations | | | | | | | | | | | | | | | | |
| ECM1 | 8 | - 2015-16 | | | | | | | | | | | | | | | | |
| ECM1 | 9 | - 2016-17 | | | | | - | - | - | - | | | | | | | | |
| ECM1 | 10 | - 2017-18 | | | | | | - | - | - | - | | | | | | | |
| ECM1 | 11 | - 2018-19 | | | | | | | - | - | - | - | | | | | | |
| ECM1 | 12 | - 2019-20 adjustment | | | | | | | | | | | | | | | | |
| ECM1 | 13 | **ECM1 benefit** | | | | | | | | | - | - | | | | | | |
| ECM2 | 14 | Gain (loss) | | | | | | | | 10 | 10 | 10 | 10 | | | | | |
| ECM2 | 15 | Out performance | | | | | | | | 10 | 10 | 10 | 10 | | | | | |
| ECM2 | 16 | Permanent gain | | | | | | | | 10 | 10 | 10 | 10 | | | | | |
| ECM2 | 17 | Incremental gain | | | | | | | | 10 | - | - | - | | | | | |
| ECM2 | 18 | ECM calculations | | | | | | | | | | | | | | | | |
| ECM2 | 19 | - 2019-20 | | | | | | | | 10 | 10 | 10 | 10 | 10 | | | | |
| ECM2 | 20 | - 2020-21 | | | | | | | | | - | - | - | - | | | | |
| ECM2 | 21 | - 2021-22 | | | | | | | | | | - | - | - | - | | | |
| ECM2 | 22 | - 2022-23 | | | | | | | | | | | - | - | - | - | | |
| ECM2 | 23 | - 2023-24 adjustment | | | | | | | | | | | | | - 10.5 | | | |
| ECM2 | 24 | **ECM2 benefit** | | | | | | | | | | | | | - **10.5** | - | | |
| | 25 | Total allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 80 | 90 | 90 | 90 |
| | 26 | Total gain / loss | - | - | - | - | - | - | - | 10 | 10 | 10 | 10 | 10 | - 10.5 | - | - | - |

**Source:** IPART analysis.

**Example 5 of 6: When there are temporary over and under spends**

▼ Temporary over and under spends are retained by the business. The ECM treats temporary over and under spends symmetrically.

| Input Values | |
|---|---|
| WACC | 5% |
| Base allowance RP2016 | 100 |
| Base allowance RP2020 | 100 |
| Base allowance RP2024 | 100 |

| | | Regulatory Period | RP2012 | | | | RP2016 | | | | RP2020 | | | | RP2024 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Efficiency Carryover Mechanism | | | | | ECM1 | | | | ECM2 | | | | ECM3 | | | |
| ROW | | Year | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| 1 | | Base allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2 | | Actual expenditure | 100 | 100 | 100 | 100 | 90 | 110 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 3 | ECM1 | Gain (loss) | | | | | 10 | -10 | - | | | | | | | | | |
| 4 | ECM1 | Out performance | | | | | 10 | - | - | | | | | | | | | |
| 5 | ECM1 | Permanent gain | | | | | - | - | - | | | | | | | | | |
| 6 | ECM1 | Incremental gain | | | | | - | - | - | | | | | | | | | |
| 7 | ECM1 | ECM calculations | | | | | | | | | | | | | | | | |
| 8 | ECM1 | - 2015-16 | | | | | | | | | | | | | | | | |
| 9 | ECM1 | - 2016-17 | | | | | - | - | - | - | | | | | | | | |
| 10 | ECM1 | - 2017-18 | | | | | | - | - | - | - | | | | | | | |
| 11 | ECM1 | - 2018-19 | | | | | | | - | - | - | - | | | | | | |
| 12 | ECM1 | - 2019-20 adjustment | | | | | | | | | | | | | | | | |
| 13 | ECM1 | **ECM1 benefit** | | | | | | | | | - | - | | | | | | |
| 14 | ECM2 | Gain (loss) | | | | | | | | - | - | - | - | | | | | |
| 15 | ECM2 | Out performance | | | | | | | | - | - | - | - | | | | | |
| 16 | ECM2 | Permanent gain | | | | | | | | - | - | - | - | | | | | |
| 17 | ECM2 | Incremental gain | | | | | | | | - | - | - | - | | | | | |
| 18 | ECM2 | ECM calculations | | | | | | | | | | | | | | | | |
| 19 | ECM2 | - 2019-20 | | | | | | | | - | - | - | - | - | | | | |
| 20 | ECM2 | - 2020-21 | | | | | | | | | - | - | - | - | | | | |
| 21 | ECM2 | - 2021-22 | | | | | | | | | | - | - | - | - | | | |
| 22 | ECM2 | - 2022-23 | | | | | | | | | | | - | - | - | - | | |
| 23 | ECM2 | - 2023-24 adjustment | | | | | | | | | | | | | - | | | |
| 24 | ECM2 | **ECM2 benefit** | | | | | | | | | | | | | - | - | | |
| 25 | | Total allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 26 | | Total gain / loss | - | - | - | - | 10 | -10 | - | - | - | - | - | - | - | - | - | - |

**Source:** IPART analysis.

**Example 6 of 6: The ECM should not apply to temporary under spends in year 3**

- If a temporary under spend in year 3 is mistaken as a permanent saving under the ECM, this could result in a loss for the business. This is not an intended outcome of the ECM. If there is doubt whether the saving is permanent, we consider the business is unlikely to apply for a carryover under the ECM. We will continue to assess historical expenditure when resetting of the allowance.

| Input Values | |
|---|---|
| WACC | 5% |
| Base allowance RP2016 | 100 |
| Base allowance RP2020 | 90 |
| Base allowance RP2024 | 100 |

| | ROW | Regulatory Period | RP2012 | | | | RP2016 | | | | RP2020 | | | | RP2024 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Efficiency Carryover Mechanism | | | | | ECM1 | | | | ECM2 | | | | ECM3 | | | |
| | | Year | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| | 1 | Base allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 90 | 90 | 100 | 100 | 100 | 100 |
| | 2 | Actual expenditure | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| ECM1 | 3 | Gain (loss) | | | | | - | - | 10 | | | | | | | | | |
| ECM1 | 4 | Out performance | | | | | - | - | 10 | | | | | | | | | |
| ECM1 | 5 | Permanent gain | | | | | - | - | 10 | | | | | | | | | |
| ECM1 | 6 | Incremental gain | | | | | - | - | 10 | | | | | | | | | |
| ECM1 | 7 | ECM calculations | | | | | | | | | | | | | | | | |
| ECM1 | 8 | - 2015-16 | | | | | | | | | | | | | | | | |
| ECM1 | 9 | - 2016-17 | | | | | - | - | - | - | | | | | | | | |
| ECM1 | 10 | - 2017-18 | | | | | | - | - | - | - | | | | | | | |
| ECM1 | 11 | - 2018-19 | | | | | | | 10 | 10 | 10 | 10 | | | | | | |
| ECM1 | 12 | - 2019-20 adjustment | | | | | | | | | | | | | | | | |
| ECM1 | 13 | **ECM1 benefit** | | | | | | | | | **10** | **10** | | | | | | |
| ECM2 | 14 | Gain (loss) | | | | | | | | - 10 | - 10 | - 10 | - 10 | | | | | |
| ECM2 | 15 | Out performance | | | | | | | | - | - | - | - | | | | | |
| ECM2 | 16 | Permanent gain | | | | | | | | - | - | - | - | | | | | |
| ECM2 | 17 | Incremental gain | | | | | | | | - | - | - | - | | | | | |
| ECM2 | 18 | ECM calculations | | | | | | | | | | | | | | | | |
| ECM2 | 19 | - 2019-20 | | | | | | | | - | - | - | - | - | | | | |
| ECM2 | 20 | - 2020-21 | | | | | | | | | - | - | - | - | | | | |
| ECM2 | 21 | - 2021-22 | | | | | | | | | | - | - | - | - | | | |
| ECM2 | 22 | - 2022-23 | | | | | | | | | | | - | - | - | - | | |
| ECM2 | 23 | - 2023-24 adjustment | | | | | | | | | | | | | - | | | |
| ECM2 | 24 | **ECM2 benefit** | | | | | | | | | | | | | - | - | | |
| | 25 | Total allowance | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 90 | 100 | 100 | 100 | 100 |
| | 26 | Total gain / loss | - | - | - | - | - | - | 10 | - | - | - | - 10 | - 10 | - | - | - | - |

**Source:** IPART analysis.

# F Customer and NSW Government share of WaterNSW revenue requirements

This appendix provides a brief history of our development of the cost sharing ratios, and the key concepts used in our approach. In particular:

- Section F.1 provides an overview of the argument for a government contribution
- Section F.2 provides an overview of Frontier Economics' review of our approach to cost sharing and further detail on its proposed approach to sharing costs between WaterNSW's customers and the NSW government

## F.1 Argument for government contribution

Consistent with the NWI principles, prices and charges for water should in general recover the full efficient cost of providing the service to water users. However, as in other industries that we regulate (such as public transport), there are economic arguments for some government contribution to the cost of providing water services. These include:

- the existence of public goods,
- the existence of unavoidable legacy costs, and
- where it is impracticable to recover costs from specific users or beneficiaries of these services.

### F.1.1 The existence of public goods

There is an economic argument for long-term under-recovery of costs (that is, a government contribution) when the services provided by monopolies have public good aspects, as otherwise, such services may be under-provided.

WaterNSW's services contain a public good element as the costs incurred in managing dams, weirs, canals, monitoring and flow control assets and other parts of the bulk water system do not exclusively relate to bulk water delivery. These infrastructure assets provide broader community services, such as flood mitigation and environmental monitoring benefits.

### F.1.2 The existence of unavoidable legacy costs

There is an economic argument for government contribution to the costs of activities which would continue to be required, even if extractive use were to cease. In this sense, such costs (e.g. costs of remediating past environmental damage) may be required regardless of any future users. Such legacy costs therefore do not form part of the avoidable, full efficient cost of providing the service to water users. Therefore, there is no economic efficiency argument

for signalling these costs to users as these costs will not change regardless of water users' consumption decisions, and as such, they should be borne by the government.

### F.1.3 Where it is impractical to recover costs

As noted by a number of stakeholders,[345] and as shown in Table F.1, there may be a number of types of 'users' of WaterNSW's services beyond billed customers (e.g. basic landholder rights, planned environmental water, downstream communities who receive flood mitigation benefits). To the extent that such parties cause WaterNSW to incur costs in providing these services, there may be a legitimate case for assigning a share of these costs to these users rather than irrigators.

**Table F.1 Establishing whether impactors of WaterNSW's water storage and transportation services are billed customers**

| Users of WaterNSW's services | Users | Impactor | Billed customer |
|---|---|---|---|
| Irrigators | ✔ | ✔ | ✔ |
| Local councils | ✔ | ✔ | ✔ |
| Holders of basic landholder water rights | ✔ | ✔ | ✘ |
| The Environment (planned water) | ✔ | ✘ | ✘ |
| Environmental water holders | ✔ | ✔ | ✔ |
| Downstream communities | ✘ | ✔ | ✘ |
| Broader NSW/Australian community | ✔ | ✔ | ✘ |
| Recreational water users | ✔ | ✔ | ✘ |

**Source:** Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 46.

However, it may not be efficient and cost-effective to:

- identify the specific impactor,
- identify the proportion of forward-looking costs that current and future impactors ma y contribute to the costs of providing WaterNSW's services, and
- levy WaterNSW's charge on the impactors (say, due to policy, regulatory or commercial billing barriers).

In these contexts, it may be appropriate for taxpayers, through the NSW Government, to bear the costs created by these impactors on their behalf.

345 See Toonumbar Water Users Group submission, October 2016; Lachlan Valley Water submission, October 2016, pp 4-5; and The Macquarie River Food and Fibre submission, October 2016, p 3, pp 6-7.

## F.2 Reviewing IPART's cost sharing framework

Given we consider there is an economic case for the government to contribute to WaterNSW's efficient costs, we have developed and applied an approach for determining the cost shares of activities (see Chapter 9). This approach involves allocating cost shares by expenditure activity, with these shares being set uniformly across all valleys.

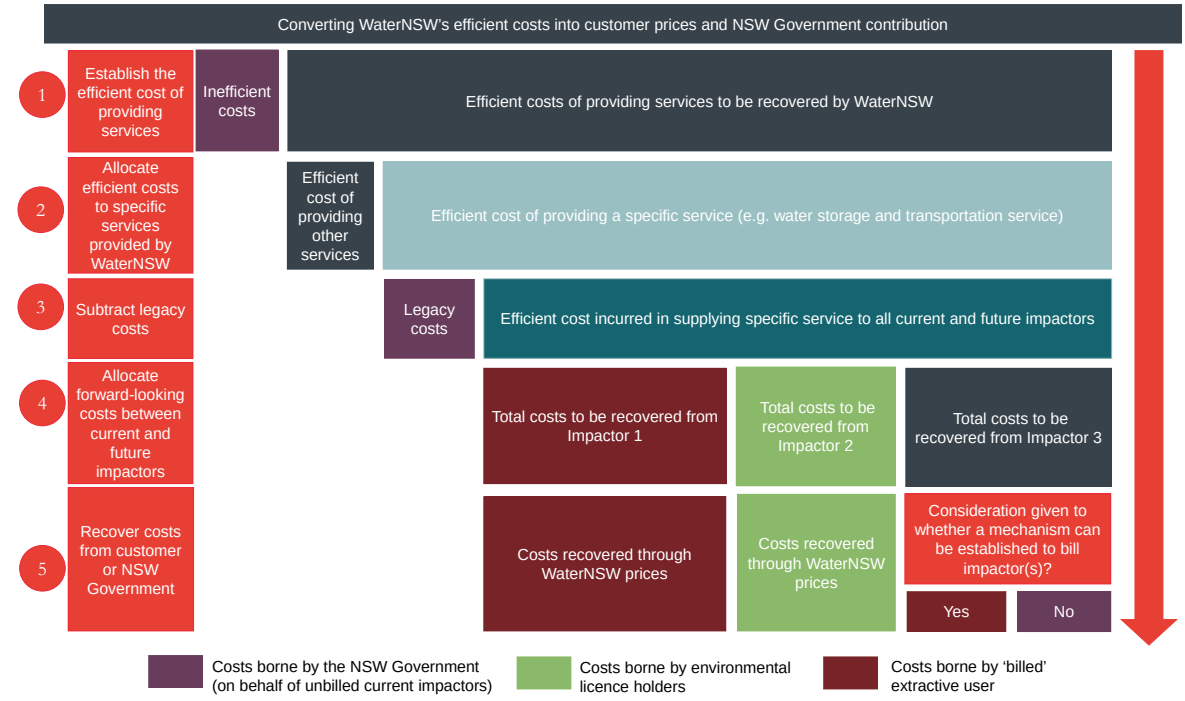
IPART engaged Frontier Economics to review the cost sharing framework (which underpinned WaterNSW's proposal). Frontier Economics proposed that IPART implement a cost sharing framework that provides a clear and transparent process for allocating costs between users to establish a set of customers and NSW Government cost shares, which can then be used to derive WaterNSW's charges.[346]

Frontier Economics' proposed framework for allocating costs between users to establish a set of customer and NSW Government cost shares is outlined in Figure F.1 and involves five key stages:

20. establish the efficient costs of providing WaterNSW's services
21. allocate efficient costs to specific services provided by WaterNSW
22. subtract legacy costs to determine the efficient forward-looking costs to be recovered from current and future impactors
23. allocate efficient forward-looking costs between current and future impactors
24. recover costs from customer or NSW Government through prices and NSW Government contribution (or other cost-recovery method).

346 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, 34.

**Figure F.1 Frontier Economics' proposed approach to allocating costs between customers and establishing a customer and Government cost sharing framework**

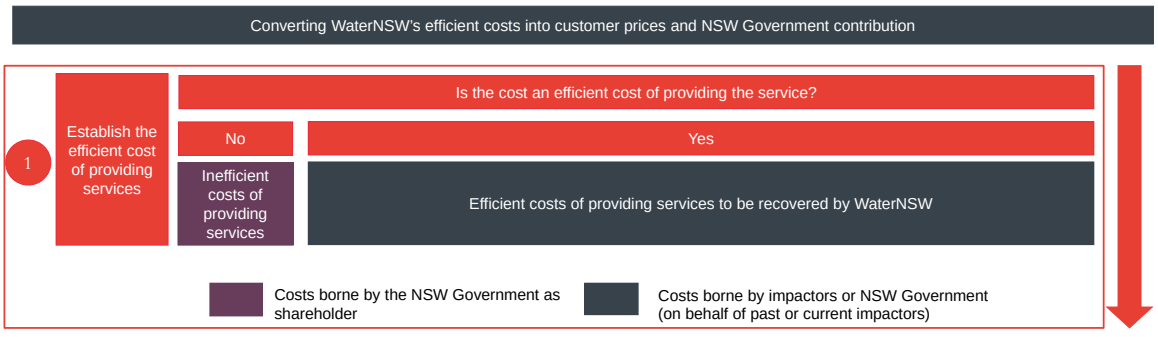



**Source:** Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 36

### F.2.1 Establish the efficient costs of providing WaterNSW services

As shown in Figure F.2, the first step of the proposed approach for converting WaterNSW's efficient costs of service provision into prices (reflecting assigned cost shares) is to establish the efficient cost of providing those services.

**Figure F.2 Step one of the proposed approach: Establish the efficient cost of providing services**




**Source:** Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 37.

As noted in our Issues Paper[347] and set out in Chapter 4 of this report, prices should be set to allow WaterNSW to recover only the efficient costs of the services that it provided. This is a well-accepted principle and reflects the need to:

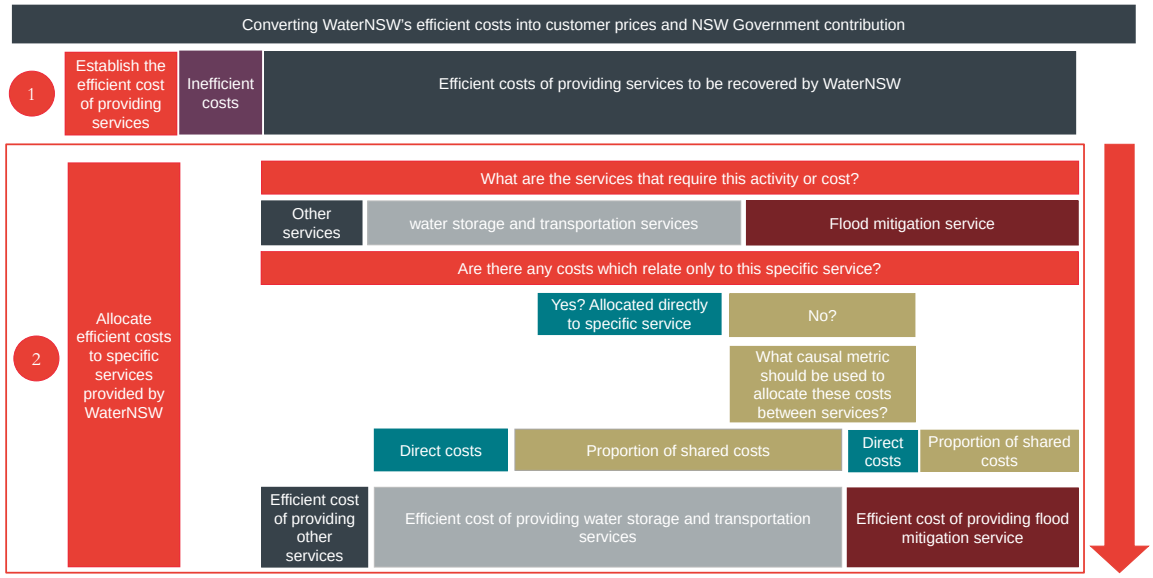
- signal to consumers the costs of their consumption decisions and result in an efficient use and allocation of resources,
- provide incentives for efficient investment in service provision, and
- mimic outcomes expected in a competitive market.

It is important to note that the efficient costs of service provision may include unavoidable costs that could be considered 'legacy costs'.

### F.2.2 Allocate costs to specific services provided by WaterNSW

As shown in Figure F.3, step two of the proposed approach for converting WaterNSW's efficient costs of service provision into prices involves allocating WaterNSW's efficient costs to its key services.

**Figure F.3 Step two of the proposed approach: allocate efficient costs to specific services provided by WaterNSW**




**Source:** Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 38.

Customers should only pay for the efficient costs of providing services for which they are impactors. Allocating WaterNSW's efficient costs to its key services is likely to ensure that:

- Customers or impactors (noting these parties may be different) only pay for the services that they use or costs they create. Some services will be provided to many customers, while others will only be provided to some customers.
- The cost sharing framework can cater for a more granular level of cost allocation between impactors across valleys.

347 IPART, *Review of prices for WaterNSW Rural bulk water services from 1 July 2017 – Issues Paper*, September 2016.

- There are clear incentives for WaterNSW to efficiently invest in and operate specific services.
- There is transparency regarding the costs of providing those services, particularly when some of these services involve different activities and utilise different assets (recognising that there will be some common costs, such as dam safety compliance and corporate overheads).
- The cost sharing framework can accommodate changes in the policy, regulatory and operating environment, say by facilitating a move to light-handed forms of regulation for a specific service or facilitate the introduction of competition for that specific service.

Frontier Economics has recommended a number of potential services that could be specified in step two for regulatory price setting purposes including:[348]

- **water storage and transportation services** – which involves capturing, storing and transporting water to downstream users
- **flood mitigation services** – which involves reducing the risk of extreme downstream flooding
- **environmental management services**- which involves planning and management activities as a result of water use or the need to mitigate the impacts of water use
- **retailing, metering and customer service activities** - for example, WaterNSW provides a metering service to those customers who extract water through a WaterNSW-owned meter
- **other services, including ancillary or miscellaneous services**, such as costs of facilitating water trading, Fish River connections/disconnections.[349]

These services would need to be specified for each valley given the mixture of services provided by WaterNSW and the varying cost of providing these services across each valley.

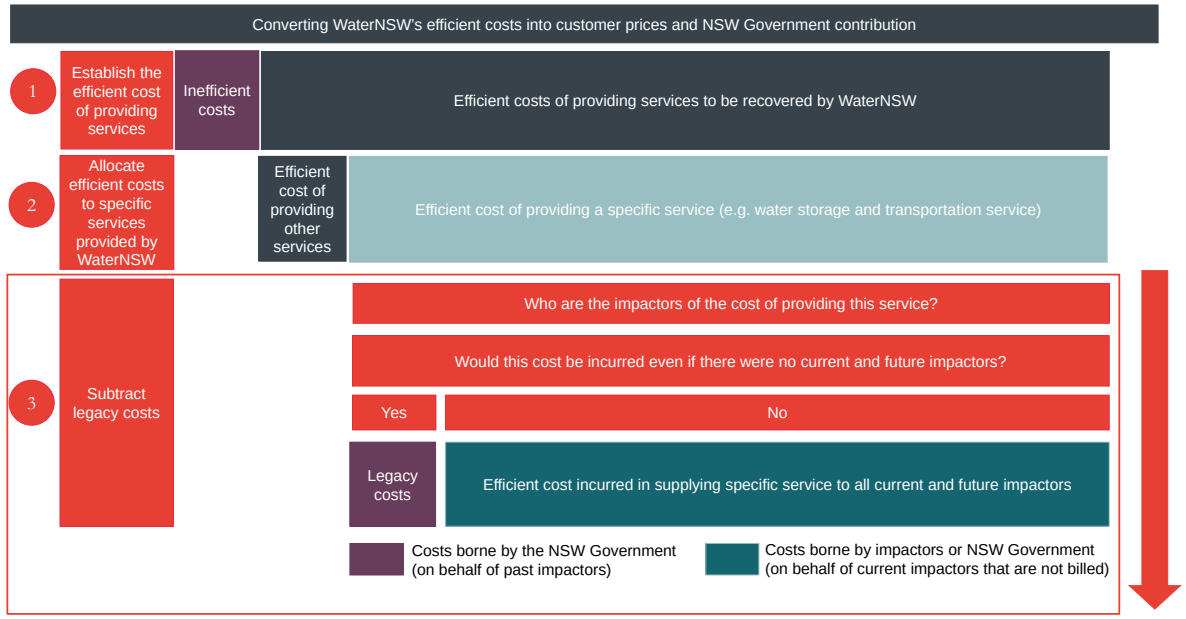
### F.2.3 Subtract legacy costs to determine the forward looking costs to be recovered from current and future impactors

As shown in Figure F.4, step three of the proposed approach for converting WaterNSW's efficient costs of service provision into prices involves subtracting 'true' legacy costs from the estimate of the efficient cost of providing specific services.

348 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, pp 41-42.

349 For more detail around allocating WaterNSW's efficient costs to specific services provided by WaterNSW see: Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, pp 38-42.

**Figure F.4 Step three of the proposed approach: subtract legacy costs**




**Source:** Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p42

Legacy costs include costs that would be incurred if there were no current and future impactors. Under the proposed approach, only costs which are unavoidable are properly categorised as 'legacy costs', with these costs to be assigned to the NSW Government on behalf of past impactors.

Identifying any legacy costs requires:

- identifying the impactors of the costs of providing a specific service
- establishing whether any costs are unavoidable in that they are driven by past impactors (i.e. would be incurred even if there were no current and future impactors), and
- allocating costs to past impactors (i.e. establishing any true legacy costs) using an appropriate metric that clearly links costs to the actions of past impactors.[350]

Frontier Economics' report suggests that IPART may have interpreted legacy costs as requiring government (rather than users) to pay for any costs associated with changed regulatory standards and Frontier Economics notes that:[351]

- Legislation and regulation is constantly changing in a range of activities and the costs of complying with such regulation is typically absorbed by the party which has to comply and then passed on to users of the products or services which they supply.

350 For more detail around identifying legacy costs associated with the provision of WaterNSW's services see: Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, pp 16-17.

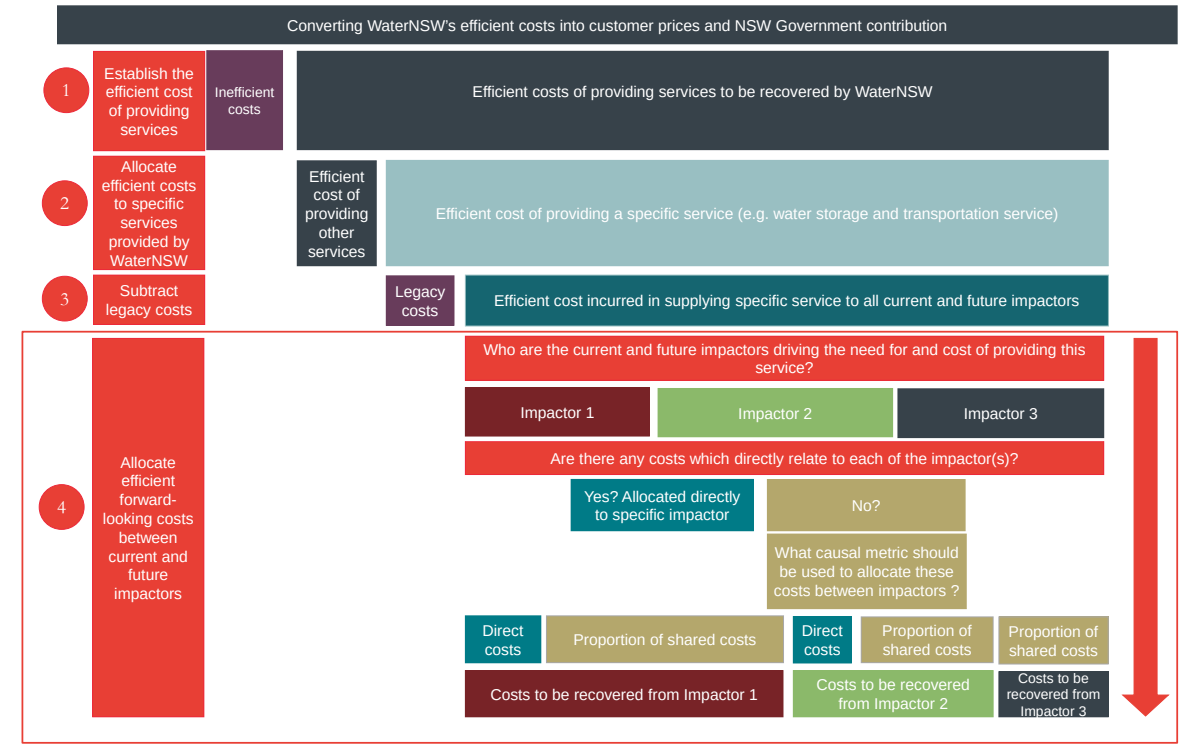
351 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 16.

- Legislation or regulation requires Water NSW to comply with certain obligations, and this represents part and parcel of the costs to Water NSW of supplying its services and should properly be recovered from users.[352] To do otherwise would be to subsidise the costs of activities required in supplying services to those users.
- Other regulatory frameworks generally applied by IPART and other economic regulators generally explicitly provide that the costs able to be recovered by regulated businesses include the prudent and efficient costs of meeting all clearly imposed legal and regulatory obligations. In many cases these regulatory obligations are imposed to protect the broader community. For example, the prudent and efficient cost to Sydney Water of complying with wet weather overflow requirements imposed by the EPA as a licence condition are permitted by IPART to be passed through to customers.

### F.2.4 Allocate forward looking costs between current and future impactors

As shown in Figure F.5, step four of the proposed approach for converting WaterNSW's efficient costs of service provision into prices is to allocate efficient forward-looking costs between various identified current and future impactors.

**Figure F.5 Step four of the proposed approach: allocate forward-looking costs between various current and future impactors**




**Source:** Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 43.

There are several key steps in allocating the efficient forward-looking costs between current and future impactors, including:[353]

352 In some sense, this is no different to the cost of electricity generators needing to comply with the Carbon Pollution Reduction Scheme (CPRS), or the costs of electricity retailers complying with the Renewable Energy Target (RET).

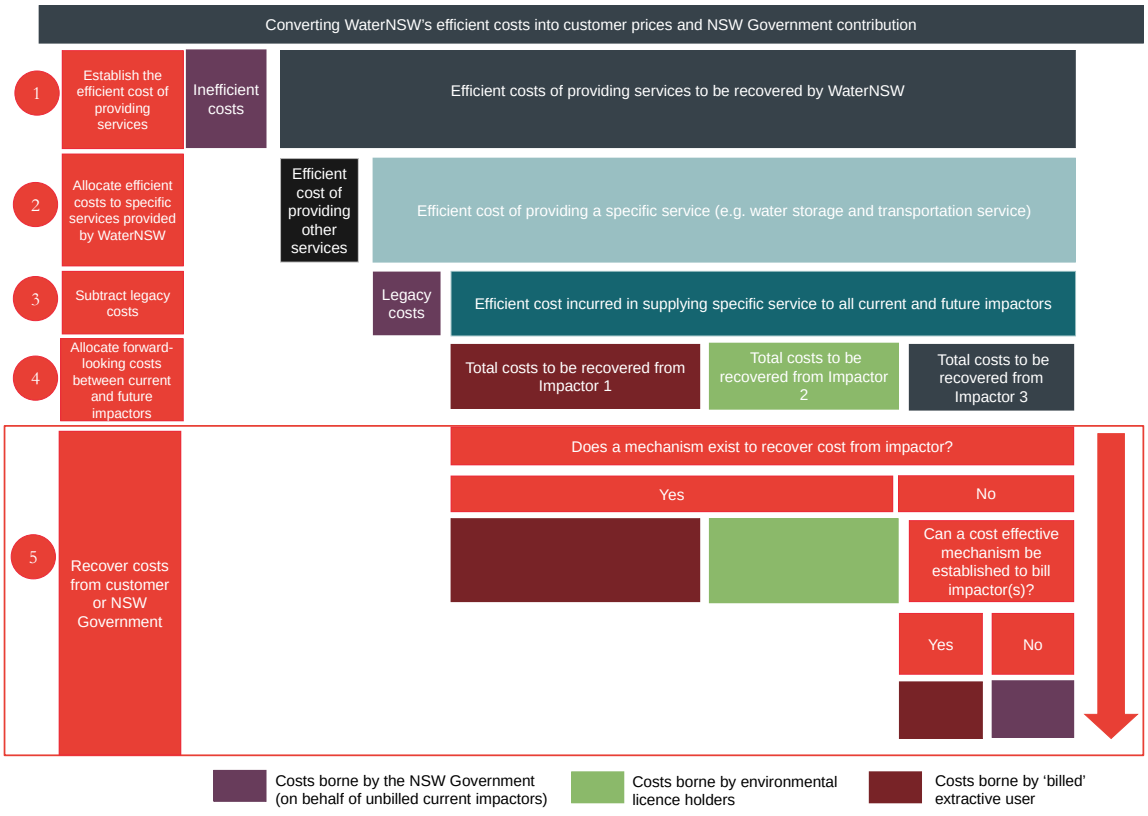
353 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 44.

- Identifying all the current and future impactors of the costs of providing a specific service. In most cases, it is likely that there is more than one impactor.
- Allocating the direct costs (such as dedicated assets) to each of the specific impactors where appropriate.
- Allocating the shared costs of providing the specific service across multiple impactors. This will require:
  - using a causal allocator where possible—consistent with the ACCC pricing principles for cost allocation— which is likely to vary depending on the nature of the shared cost and ensuring that the same cost is not allocated more than once (i.e. avoid double-counting)
  - ensuring that the aggregate costs allocated to each impactor service or user of a service are between the stand-alone and avoidable cost of providing services. This ensures that costs recovered from specific users are not outside the bounds defined by economic efficiency and would mean that all impactors of Water NSW services should be allocated at least the incremental costs associated with the provision of these services to them but no user or group of impactors should pay more than the standalone costs of providing the service.

### F.2.5 Recover costs from WaterNSW's customers or NSW Government

As shown in Figure F.6, step five of the proposed approach involves recovering the efficient costs of each of the specific services from customers or the NSW Government (or via another cost-recovery mechanism).

**Figure F.6 Step five of the proposed approach: recover costs from billed customers or the NSW Government**




**Source:** Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 45.

As highlighted in Table F.1, there are likely to be a number of impactors that are not currently billed customers, in that there is no existing mechanism to recover from these customers the costs they potentially create. For example, holders of basic landholder water rights are not currently billed for the costs of providing WaterNSW's water storage and transportation services.

In cases where it is too costly or infeasible to levy WaterNSW's charges on the specific impactor, it may be appropriate for taxpayers, through the NSW Government, to bear the costs created by these impactors on their behalf, at least until it is possible to recover the costs from the relevant impactors.

# Glossary

| | |
|---|---|
| 2006 Determination | *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation*, September 2006 (Determination Nos 4 and 5, 2006) |
| 2006 determination period | The period from 1 October 2006 to 30 June 2010, as set in the 2006 Determination |
| 2010 Determination | *Review of bulk water charges for state water corporation*, June 2010 (Determination No 2, 2010) |
| 2010 determination period | The period from 1 July 2010 to 30 June 2014, as set in the 2010 Determination |
| 2014 ACCC Decision | *ACCC Final Decision on State Water Pricing Application: 2014-15 — 2016-17*, June 2014 |
| 2017 determination period | The period commencing 1 July 2017 |
| ACCC | Australian Consumer and Competition Commission |
| ACCC's Pricing Principles | *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010*, July 2011 |
| AMD | Australian Modern Dairy |
| ANCOLD | Australian National Committee on Large Dams |
| Annual revenue requirement | The notional revenue requirement in each year of the determination period |
| BRC | Border Rivers Commission |
| BWCOP | Basin Water Charging Objectives and Principles |
| CEWO | Commonwealth Environmental Water Office |
| CPI | Consumer Price Index |
| CSO | Community service obligation |

| | |
|---|---|
| CSC | Customer Service Committee |
| Customer share of costs | We have decided to refer to what has previously been known as the 'user share of costs' as the 'customer share of costs', given that there are users of rural bulk water services (eg, the community at large), that do not contribute to the recovery of WaterNSW's NRR |
| DPI Water | Department of Primary Industries Water (formerly the NSW Office of Water) |
| ECM | Efficiency carryover mechanism |
| FCR | Full cost recovery |
| FFO | Funds from operations |
| FMMS | Facilities maintenance and management system |
| FRWS | Fish River Water Supply Scheme |
| GS | General security |
| GL | Gigalitre |
| Greater Sydney area | Water catchments that service WaterNSW storages including the Blue Mountains, Shoalhaven, Warragamba, Upper Nepean and Woronora catchments |
| GVIA | Gwydir Valley Irrigators Association |
| HS | High security |
| ICDs | Irrigation corporations and districts |
| IPART | Independent Pricing and Regulatory Tribunal of NSW |
| IPART Act | *Independent Pricing and Regulatory Tribunal Act 1992* (NSW) |
| IQQM | Integrated water Quantity and Quality simulation Model |
| kL | Kilolitre |
| LVW | Lachlan Valley Water |

| | |
|---|---|
| MDB | Murray Darling Basin |
| MDBA | Murray Darling Basin Authority |
| MAQ | Maximum Annual Quantity |
| ML | Megalitre |
| mm | Millimetre |
| MRFF | Macquarie River Food & Fibre |
| MSC | Meter service charges |
| NRR | Notional revenue requirement. Revenue requirement set by IPART that represents the efficient costs of providing WaterNSW's regulated monopoly services |
| NPV | Net Present Value |
| NSW | New South Wales |
| NSWIC | New South Wales Irrigators Council |
| NWI | National Water Initiative |
| OEH | Office of Environment and Heritage |
| PFA Act | *Public Finance and Audit Act 1983* (NSW) |
| PRV | Pressure reducing valve |
| RAB | Regulatory asset base |
| RTP | Risk transfer product |
| SCA | Sydney Catchment Authority (now part of WaterNSW) |
| SCADA | Supervisory control and data acquisition |
| SOC | State-owned corporation |
| Target revenue | The revenue WaterNSW generates from prices set by IPART for that year |
| UOM | Unders and overs mechanism |
| VaR | Value at risk |
| WACC | Weighted average cost of capital |

| | |
|---|---|
| WAMC | Water Administration Ministerial Corporation |
| Water Act | *Water Act 2007* (Cth) |
| WCIR | *Water Charge (Infrastructure) Rules 2010* made under s 92 of the *Water Act 2007* (Cth) |
| YACTAC | Yanco Creek and Tributaries Advisory Council |