



Independent Pricing and Regulatory Tribunal
New South Wales

WaterNSW

Annual Review of regulated charges for 2018-19

Final Report
Water

June 2018

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Contents

1	Executive Summary	1
1.1	Introduction	1
1.2	Our decision is to maintain regulated charges in 2018-19	2
1.3	We have amended the formulas used to calculate updated charges	3
1.4	Structure of this report	3
2	Overview of the regulatory framework	4
2.1	Regulatory framework	4
2.2	IPART's review timeline	5
2.3	The Annual Review applies to all nine MDB valleys and rural FRWS customers	5
3	WaterNSW's pricing application	7
3.1	Summary of WaterNSW's application	7
3.2	Our response to WaterNSW's pricing application	9
4	Our process for the Annual Review	11
4.1	Our approach to calculating indicative updated charges under the Annual Review	11
4.2	How we considered whether it is reasonably necessary to vary charges	12
5	Our decision to not vary regulated charges for 2018-19	17
5.1	A sustained or structural shift in demand	17
5.2	Price stability and customer bill impacts	19
6	Charges to apply in 2018-19	22
6.1	Bulk water entitlement and usage charges	22
6.2	MDBA and BRC entitlement and usage charges	22
6.3	Fish River Water Supply Scheme access and usage charges	23
	Appendices	24
A	Formulas for updating charges in Annual Reviews	25
B	Reviewing charges	31
C	Customer bill impacts	37
D	Target revenue requirement – 2017 Determination	40
E	Background information	41
	Glossary	43

1 Executive Summary

1.1 Introduction

The Independent Pricing and Regulatory Tribunal (IPART, or 'we') has completed an Annual Review of WaterNSW's regulated charges for rural bulk water services in the Murray-Darling Basin (MDB) and the Fish River Water Supply Scheme (FRWS) for its rural bulk water services for the 2018-19 financial year. This is required under the *Water Charge (Infrastructure) Rules 2010* (WCIR).¹

WaterNSW delivers bulk water to irrigators and other licence holders on regulated rivers across NSW.² WaterNSW operates 42 dams and weirs and other infrastructure, to deliver water to around 6,300 customers.

This is the first Annual Review within the current four-year determination of WaterNSW's regulated charges for rural bulk water services (the 2017 Determination³), which set maximum charges from 1 July 2017 to 30 June 2021. The 2017 Determination included three broad categories of regulated charges:

- ▼ **Bulk Water Charges** - annual charges 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 entitlement⁴, and
 - variable usage charges - \$ per ML of water used (extracted from the river).⁵
- ▼ **Murray-Darling Basin Authority (MDBA) and Border Rivers Commission (BRC) Charges** - which we set for licence holders in the Murray and Murrumbidgee and Border valleys to recover customers' share of the costs of WaterNSW's payments to the MDBA and 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.

This Annual Review relates to WaterNSW's 'bulk water charges' (to the extent they are regulated under the WCIR) as well as MDBA and BRC charges. This review provided an opportunity to consider updating these charges for the second year of the 2017 determination period, 2018-19, if we consider it to be **reasonably necessary** to do so having regard to changes in demand or consumption forecasts and price stability.⁶

¹ The *Water Charge (Infrastructure) Rules 2010* are made under s 92 of the Water Act 2007 (Cth).

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

³ IPART, *WaterNSW Prices for rural bulk water services from 1 July 2017*, Determination, June 2017.

⁴ Or, for customers in the FRWS: Minimum Annual Quantity (MAQ).

⁵ Except customers in the Lowbidgee valley which have a 100% fixed charge.

⁶ WCIR, rule 37(2).

Reviewing other elements of our 2017 Determination, such as prudent and efficient costs and tariff structures, were not within scope of this Annual Review.

This report sets out our final decisions on WaterNSW's regulated charges to its customers in the MDB and FRWS for 2018-19, and our approach to the Annual Review. This report constitutes our statement of reasons for our final decision.

1.2 Our decision is to maintain regulated charges in 2018-19

Our decision is to maintain the regulated charges for 2018-19 as set under the 2017 Determination. Although WaterNSW's pricing application and submission in response to our Draft Report requested a variation of regulated charges for 2018-19, our view is that it is not reasonably necessary to make variations to the regulated charges set out in the 2017 Determination, having regard to changes in demand and price stability.

Specifically, we consider that updated demand data (ie, changes in usage volumes, water allocation ratios and entitlement volumes) does not justify a price change, which would in turn introduce price instability.

We found no evidence that the updated demand data represents a sustained shift in demand. Hence, there is no compelling case to update charges to enhance price stability. Further, we note that WaterNSW received a revenue volatility allowance at the 2017 Determination, for the purpose of reducing revenue volatility risk associated with business-as-usual demand volatility. That is, the revenue volatility allowance is already factored into WaterNSW's regulated charges. This is different to the ACCC's approach to addressing revenue volatility and determining WaterNSW's regulated charges in the past, which involved annually updating regulated charges to incorporate the under and overs mechanism (UOM)⁷ and updated forecast volumes.⁸

Based on the above, we do not consider that it is reasonably necessary to vary charges in 2018-19 from those set in the 2017 Determination. This decision is consistent with the ACCC's pricing principles and with the scope of our powers under the WCIR.

We note the revenue impact of our decision to not update charges in 2018-19 is likely to be relatively small. All else being equal, WaterNSW is expected to recover 1.3% less revenue in 2018-19 than it would if we updated charges.⁹

⁷ The UOM adjusted charges within the determination period (during the Annual Review) to account for the holding costs of any under or over recovery of revenue faced by WaterNSW as a result of differences between forecast and actual sales volumes.

⁸ ACCC, *ACCC Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014 p 62.

⁹ This impact is measured by the difference between: WaterNSW's forecast revenue for 2018-19 calculated by multiplying updated forecast sales for 2018-19 by: a) charges set in the 2017 Determination, and b) updated charges calculated using updated forecast sales.

1.3 We have amended the formulas used to calculate updated charges

To assess whether we should update charges, we calculated indicative charges using updated usage and entitlement volumes and allocation ratios submitted by WaterNSW in its application for the Annual Review. The approach we used to calculate updated charges is shown in Appendix A of this Final Report. We note that in Appendix C of our 2017 WaterNSW Final Report we also published our approach to calculating updated charges in Annual Reviews.¹⁰ However, we have amended and clarified particular areas of our approach. Therefore, Appendix A of this Final Report supersedes Appendix C of the 2017 Final Report.

1.4 Structure of this report

The remainder of this Report is structured as follows:

- ▼ Chapter 2 provides an overview of the regulatory framework applying to the Annual Review.
- ▼ Chapter 3 summarises WaterNSW's application and IPART's response to the application.
- ▼ Chapter 4 explains the approach we have taken for this review.
- ▼ Chapter 5 further explains our decision not to vary charges set out in the 2017 Determination.
- ▼ Chapter 6 outlines our regulated charges for 2018-19.

¹⁰ IPART, *Review of Prices for Rural Bulk Water Services for WaterNSW – Final Report*, June 2017, p 221.

2 Overview of the regulatory framework

Under the WCIR, we are required to undertake annual reviews of WaterNSW's regulated charges for rural bulk water services set under the WCIR. The valleys included in the Annual Review are listed in Section 2.3 below.

The Annual Review does not relate to maximum prices for rural bulk water services set under the *Independent Pricing and Regulatory Tribunal Act 1992 (NSW) (IPART Act)*, and the 2017 Determination continues to apply to WaterNSW's maximum prices for rural bulk water services set under the IPART Act. The valleys not included in the Annual Review are WaterNSW's North Coast, South Coast and Hunter valleys. Supply to certain customers in the Fish River Water Supply Scheme is also not included.

2.1 Regulatory framework

This Annual Review provides us with the opportunity to review regulated charges for WaterNSW's rural bulk water services, as set out in the 2017 Determination, to apply over the 2018-19 financial year.

The charges for WaterNSW's bulk water services supplied in the MDB valleys and to rural customers in the FRWS are regulated under:

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

IPART is accredited by the Australian Competition and Consumer Commission (ACCC) under Part 9 of the WCIR to determine or approve WaterNSW's regulated charges from 1 June 2016.

The WCIR sets out a two-stage process for approving or determining the regulated charges for WaterNSW.

The **first stage** is the approval or determination of regulated charges for a four-year determination period. This was completed by IPART in June 2017 and applies from 1 July 2017 to 30 June 2021.

The **second stage** is the Annual Review, undertaken after the first year of the determination period set under the first stage and for each subsequent year within the determination period. WaterNSW is required to submit to IPART an application for approval or determination of its regulated charges for 2018-19. IPART must then approve WaterNSW's application or otherwise determine WaterNSW's regulated charges, in accordance with the Annual Review process set out in the WCIR.

This is the first Annual Review of WaterNSW’s charges for the current determination period. The WCIR provide that IPART must not approve any regulated charges for 2018-19 except to the extent, if any, that it is **reasonably necessary to make variations to those charges, having regard to changes in demand or consumption forecasts, and price stability.**

2.2 IPART’s review timeline

IPART must either approve or determine WaterNSW’s regulated charges within three months of receiving WaterNSW’s pricing application. The timeframe may be extended by one month at a time, provided IPART informs WaterNSW why it has been unable to make its decision during the required timeframe. If IPART requests further information from WaterNSW during the review, any day in which this information request remains unfulfilled extends IPART’s three month period for this review.

In making our final decision we have considered WaterNSW’s pricing application, which was received on 12 March 2018, and WaterNSW’s submission to our Draft Report, which was received on 14 May 2018. There were no other stakeholder submissions to our Draft Report.

The timetable for this review is outlined in Table 2.1.

Table 2.1 Review timetable

Milestone	Date
Received pricing application from WaterNSW	12 March 2018
Released Draft Report and Draft Determination	17 April 2018
Submissions to the Draft Report close	14 May 2018
Release Final Report and Final Determination	5 June 2018

2.3 The Annual Review applies to all nine MDB valleys and rural FRWS customers

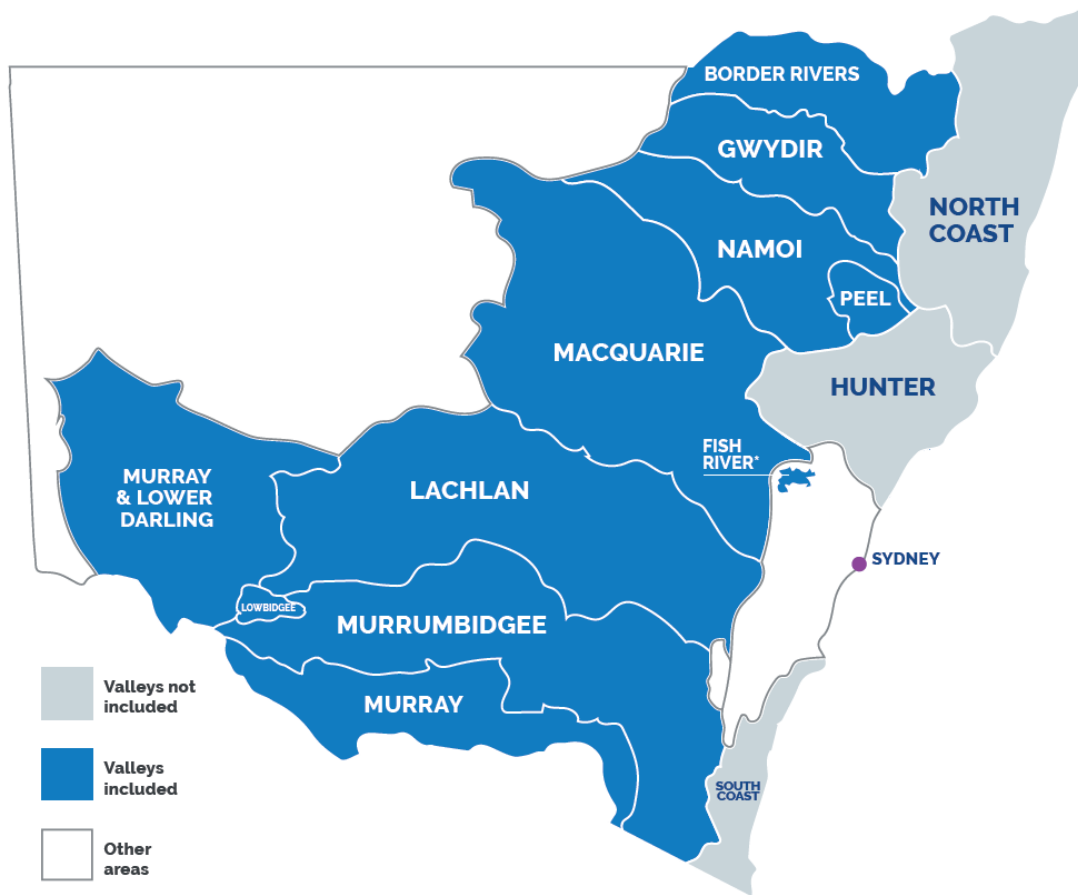
The Annual Review applies to nine MDB valleys and rural customers in the FRWS. These valleys and customers are:

- ▼ Border (including BRC charges)
- ▼ Gwydir
- ▼ Namoi
- ▼ Peel
- ▼ Lachlan
- ▼ Macquarie
- ▼ Murray (including MDBA charges)
- ▼ Murrumbidgee (including MDBA charges)
- ▼ Lowbidgee
- ▼ FRWS rural customers:
 - Major customer (raw)
 - Minor customers (filtered and raw)

The Annual Review does not affect WaterNSW’s North Coast, South Coast and Hunter valley customers, as these valleys are not subject to the WCIR.

Figure 2.1 illustrates which valleys are in and out of scope of the Annual Review.

Figure 2.1 Valleys in and out of scope for the Annual Review



Note: This map is not to scale and is for illustrative purposes only. Only regulated river charges are in scope of the Annual Review. Only rural customers in the FRWS are in scope of the Annual Review.

3 WaterNSW's pricing application

WaterNSW's pricing application complies with the form and content requirements of rule 34(2) of the WCIR and includes:

- ▼ WaterNSW's forecast of demand for, or consumption of, infrastructure services for the year 2018-19
- ▼ WaterNSW's estimate of demand or consumption during 2017-18
- ▼ information on how the forecast and estimate were calculated, and
- ▼ proposed regulated charges for 2018-19.

3.1 Summary of WaterNSW's application

WaterNSW's application sought IPART's approval of its regulated charges determined in accordance with the WCIR, in respect of the second year of the 2017 Determination period (ie, 2018-19). WaterNSW's application can be accessed on our website.¹¹

WaterNSW's proposed regulated charges for 2018-19 differ from the 2017 Determination to reflect changes in forecast sales volumes (ie, forecast usage volumes, entitlement volumes and water allocation ratios). WaterNSW's updated forecast sales volumes for 2018-19 include actual usage volumes in 2016-17 and updated entitlement volumes for 2018-19 (year-to-date February 2018).

WaterNSW has calculated its proposed updated charges in line with the approach we set out in Appendix C of our Final Report accompanying the 2017 Determination.¹²

Tables 3.1 to 3.3 show the charges proposed by WaterNSW. These charges are in \$2016-17 to allow comparability with the charges set under the 2017 Determination.

Table 3.1 WaterNSW's pricing application for bulk water charges 2018-19 (\$2016-17) (\$/ML)

Valley	2017 Determination (\$/ML)	WaterNSW's proposed charges (\$/ML)	Change (%)
HS entitlement charge			
Border	5.33	5.07	-4.9
Gwydir	11.08	11.04	-0.4
Namoi	17.08	16.72	-2.1
Peel	41.57	41.56	0.0
Lachlan	15.38	14.87	-3.3
Macquarie	13.51	13.33	-1.3
Murray	1.54	1.54	0.0
Murrumbidgee	2.95	2.95	0.0
Lowbidgee	N/A	N/A	N/A
GS entitlement charge			

¹¹ <https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Rural-Water/WaterNSW-Annual-Review-of-regulated-charges-2018-19?qDh=3>

¹² IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, p 221.

Valley	2017 Determination (\$/ML)	WaterNSW's proposed charges (\$/ML)	Change (%)
Border	1.98	1.98	0.0
Gwydir	3.48	3.48	0.0
Namoi	7.96	7.96	0.0
Peel	4.02	4.13	2.7
Lachlan	2.73	2.78	1.8
Macquarie	2.85	2.86	0.4
Murray	0.75	0.75	0.0
Murrumbidgee	1.11	1.11	0.0
Lowbidgee	0.78	0.78	0.0
Usage charges			
Border	5.44	5.33	-2.0
Gwydir	11.87	12.02	1.3
Namoi	19.98	19.90	-0.4
Peel	18.36	17.99	-2.0
Lachlan	19.04	20.16	5.9
Macquarie	13.78	14.10	2.3
Murray	1.91	1.95	2.1
Murrumbidgee	3.31	3.39	2.4
Lowbidgee	N/A	N/A	N/A

Source: WaterNSW, *Submission to IPART annual price review, March 2018*, p 10; IPART, *Prices for rural bulk water services for WaterNSW – Final Report, June 2017*, pp 9-10.

Table 3.2 WaterNSW's pricing application for MDBA/BRC charges 2018-19 (\$2016-17) (\$/ML)

Valley	2017 Determination (\$/ML)	WaterNSW's proposed charges (\$/ML)	Change (%)
HS entitlement charge			
Border	4.61	4.39	-4.8
Murray	7.27	7.27	0.0
Murrumbidgee	1.61	1.61	0.0
GS entitlement charge			
Border	1.71	1.71	0.0
Murray	3.56	3.56	0.0
Murrumbidgee	0.61	0.61	0.0
Usage charges			
Border	0.78	0.77	-1.3
Murray	1.50	1.53	2.0
Murrumbidgee	0.30	0.31	3.3

Source: WaterNSW, *Submission to IPART annual price review, March 2018*, p 11; IPART, *Prices for rural bulk water services for WaterNSW – Final Report, June 2017*, p 11.

Table 3.3 WaterNSW's pricing application for FRWS charges 2018-19 (\$2016-17) (\$/ML)

Valley	2017 Determination (\$/kL)	WaterNSW's proposed charges (\$/kL)	Change (%)
Access charges			
Raw water - major customers	0.39	0.39	0.0
Raw water - minor customers	0.39	0.39	0.0
Filtered water - minor customers	0.76	0.73	-3.9
Usage < MAQ charges			
Raw water - major customers	0.24	0.25	4.2
Raw water - minor customers	0.24	0.25	4.2
Filtered water - minor customers	0.46	0.44	-4.3
Usage > MAQ charges			
Raw water - major customers	0.63	0.63	0.0
Raw water - minor customers	0.63	0.63	0.0
Filtered water - minor customers	1.22	1.35	10.7

Source: WaterNSW, *Submission to IPART annual price review, March 2018*, p 11; IPART, *Prices for rural bulk water services for WaterNSW – Final Report, June 2017*, p 12.

As outlined in Chapter 2, under the WCIR, IPART must not approve regulated charges in respect of the 2018-19 year, except to the extent, if any, that it is **reasonably necessary, having regard to changes in demand and consumption forecasts, and price stability**.

WaterNSW's application considers changes in demand and consumption forecasts and price stability.

WaterNSW submits that varying regulated charges to reflect updated forecast sales volumes is reasonably necessary because the updated forecast of sales volumes (calculated as the 20-year rolling historical average) is:

- ▼ more indicative of recent water usage patterns
- ▼ it provides a hedge against revenue volatility risk, and
- ▼ it could avoid price shocks to customers from a sudden change in charges at the next price determination.¹³

WaterNSW suggests that varying charges to reflect updated forecast sales volumes is consistent with price stability. It analysed the change in bills that would occur between 2017-18 and 2018-19 if charges were varied. It estimated that most customers would experience a bill increase of between 0.5% for High Security (HS) entitlement holders in the Macquarie and Gwydir valleys and up to 5.1% for General Security (GS) entitlement holders in the Lachlan valley (presented in \$2016-17), and observed that the bill movements would be relatively minor.¹⁴

3.2 Our response to WaterNSW's pricing application

In this section, we respond to WaterNSW's assessment that it is **reasonably necessary** to vary its regulated charges set out in the 2017 Determination for the 2018-19 year, **having regard to changes in demand or consumption forecasts and price stability**.

We agree with WaterNSW's assessment that updated sales forecasts¹⁵ are more indicative of recent water usage patterns.

However, we do not agree that it is reasonably necessary to vary charges (to reflect updated sales volume forecasts) to mitigate revenue volatility risk to WaterNSW. In the 2017 Determination we provided WaterNSW with a revenue volatility allowance. This was structured to allow WaterNSW to purchase a risk transfer product, which would provide insurance equal to setting WaterNSW's tariff structure at 80:20 fixed to variable (in terms of target revenue). While it is likely WaterNSW will still be exposed to some revenue volatility risk (as the ratio of its fixed to variable costs is likely to be higher than its 80:20 fixed to variable effective tariff structure); the revenue volatility allowance should significantly mitigate this risk. On that basis, we do not consider the potential impact of changes in demand forecasts on WaterNSW's revenue is sufficient to justify varying the charges set out in the 2017 Determination for the 2018-19 year.

¹³ WaterNSW, *Submission to IPART annual price review*, March 2018, p 12.

¹⁴ WaterNSW, *Submission to IPART annual price review*, March 2018, p 13.

¹⁵ Calculated as the 20-year rolling average for usage volumes and water allocations and using the latest available data for entitlement numbers.

Under the methodology set out in the ACCC's 2014 Final Decision, charges were adjusted on an annual basis to account for revenue volatility risk. This was done through updating charges annually to include an 'unders and overs mechanism' (UOM).¹⁶ However, we made the decision to replace that UOM with a revenue volatility allowance in the 2017 Determination.¹⁷

We agree that varying charges annually could avoid price shocks to customers from a sudden change in the regulated charges at the next price determination. However, this would only be true if year-on-year changes in usage volumes, water allocation percentages and/or entitlement volumes moved in the same direction. This would be the case if there was a sustained or structural change in the industry that affected one or more of these variables. In the absence of this, updating charges annually to reflect the 'business-as-usual' year on year volatility could create unnecessary price instability for customers. As usage volumes and water allocation ratios can be very volatile year on year, this could lead to changes in charges in one year moving in the opposite direction to variation in charges that occurred in the previous year (ie, changes that offset each other year on year).

These factors are discussed further in Chapters 4 and 5.

¹⁶ ACCC, *WaterNSW Annual review of regulated charges for 2016-17*, May 2016, pp 7-8.

¹⁷ IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, p 6.

4 Our process for the Annual Review

This chapter discusses how we considered WaterNSW's pricing application, which requested that we vary charges in this Annual Review.

We calculated the charges that would have applied if we were to update them to account for updated forecast sales volumes (taking into account updated usage, entitlement and allocation volumes). Section 4.1 discusses the approach we used to calculate these updated charges. Appendix A provides more details.

As required under the WCIR, we considered if applying the updated charges (and thereby varying charges from those set under the 2017 Determination) is reasonably necessary, having regard to:

- ▼ demand and consumption forecasts, and
- ▼ price stability.

In making this decision, we considered WaterNSW's submission in response to our Draft Report and Draft Determination (which was the only submission received in response to these documents).

4.1 Our approach to calculating indicative updated charges under the Annual Review

We have maintained the draft decision not to vary charges set out in the 2017 Determination for this Final Report. In reaching this decision, we applied the approach set out in Appendix A of this Final Report to calculate 'indicative charges' that would apply if we were to update the 2018-19 charges listed in the 2017 Determination to reflect updated sales forecasts (using updated historical sales volumes). In essence, Appendix A states that regulated charges could vary as usage, entitlement and allocation values change year on year. These 'indicative charges' were presented in the Draft Report and are also shown in Appendix B of this report.

We note that Appendix C of IPART's Final Report on the *Review of prices for rural bulk water services from 1 July 2017* (the 2017 Final Report) also sets out IPART's intended approach to calculating updated charges for the purposes of the Annual Review process. However, we have amended and clarified particular areas of this appendix, as discussed below. Therefore, Appendix A of this Final Report supersedes Appendix C of the 2017 Final Report.

4.1.1 Charges for rural customers in the FRWS

Relative to Appendix C of the 2017 Final Report, the key change in Appendix A of this Final Report is an additional formula to calculate the usage charge greater than the Minimum Annual Quantity (MAQ) for rural customers in the FRWS. This is to ensure that the usage charge greater than the MAQ will be equal to the sum of the MAQ access charge and the

usage charge less than the MAQ (on a \$ per kL basis). This is consistent with our approach to calculating charges in the current 2017 Determination.

4.1.2 Latest full year or year to date entitlement volumes

WaterNSW's pricing application provided 2016-17 actual entitlement volumes and year to date (YTD) entitlement volumes as of February 2018. In its pricing application, WaterNSW used the February 2018 YTD entitlement volumes to vary charges, consistent with the ACCC's approach in the 2015-17 and 2016-17 Annual Reviews.¹⁸

However, as there is no major difference between 2016-17 full year entitlement volumes and February 2018 YTD entitlement volumes, and to maintain consistency with our approach of using 2016-17 full year usage volumes, we have used 2016-17 full year entitlement volumes to calculate what the charges would be if they were to be updated as part of this Annual Review (ie, the indicative charges listed in Appendix B).

In comparing February YTD to 2016-17 actual entitlement volumes, there are minor differences in the Namoi and Peel valleys for GS entitlement volumes and the Lachlan and Murray valleys for HS entitlement volumes. These small differences do not affect our decision to leave the regulatory charges unchanged in 2018-19. In future reviews, we will consider using latest available YTD volumes if they are substantially different to full year actual volumes.

4.2 How we considered whether it is reasonably necessary to vary charges

Under the WCIR, after receiving an application from WaterNSW for the Annual Review of its regulated charges, IPART must either approve or determine the regulated charges for the relevant year according to the criteria set out under rule 37(2) of the WCIR. Under rule 37(2), IPART must not vary charges from those set out in the prevailing price determination, except to the extent that it is **reasonably necessary**, having regard to two matters only, including:

- ▼ 'the changes in the demand or consumption forecasts' set out in WaterNSW's application for an annual review;¹⁹ and
- ▼ 'price stability'.²⁰

The charges set under Division 2 of the WCIR for WaterNSW were set in June 2017 to take effect from 1 July 2017 to 30 June 2021 and published in the 2017 Determination. We have set constant charges in the 2017 Determination, but have included adjustments each year to index charges by CPI.

To assess the reasonably necessary threshold, **we considered whether there is evidence to suggest the updated data reflects a sustained or structural shift in demand and price stability for customers.** If updated sales volumes reflect normal year to year variations, updating charges annually could undermine price stability and increase price volatility. For

¹⁸ WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, p 6.

¹⁹ WCIR, rule 37(2)(a)

²⁰ WCIR, rule 37(2)(b)

example, if an increase in the 20-year historical rolling average used to forecast usage volumes in one year is followed by a decrease in this average the next year, then water usage charges could decrease in the first year and then increase the year after.

However, if updated sales volumes reflect a sustained shift in demand, then updating charges annually could enhance price stability by avoiding a larger price change at the next four year price review. It may also ensure WaterNSW does not significantly under- or over-recover revenue as a result of a sustained shift in demand.

Chapter 5 outlines our consideration and assessment of these factors.

4.2.1 Stakeholder comments

WaterNSW's submission to the Draft Report states that IPART should apply the requirements relevant to the annual review process under the WCIR in a manner that is consistent with the practical examples of the ACCC's past approach.²¹

WaterNSW submits that IPART does not have power, under the WCIR and the terms of its accreditation by the ACCC under Part 9 of the WCIR, to depart from the ACCC's past approach.²²

WaterNSW argues, in effect, that its proposed charges meet the criteria for varying charges under rule 37(2) of the WCIR, on the basis that the ACCC adjusted charges to reflect updated water volume data in its previous annual reviews. Specifically, WaterNSW makes reference to advice provided by the ACCC to the Minister for Climate Change and Water regarding the WCIR and the Annual Review. In the advice, the ACCC acknowledges that because demand is variable and uncertain, there is a risk that the operator (in this case WaterNSW) could under or over recover revenue during the determination period. To address this, the ACCC introduced the annual variation process to ensure operators recover sufficient revenue.²³ WaterNSW's position is that IPART should only consider not varying charges to the extent that the update would cause significant price volatility.²⁴

Our response to stakeholder comments

Our assessment and decision not to vary the regulated charges for the 2018-19 year is consistent with our powers under the WCIR and the terms of our accreditation by the ACCC under Part 9 of the WCIR, including the condition of our accreditation requiring us to apply the ACCC's 'pricing principles'.

Additionally, the ACCC approach that was applied to the previous two annual reviews, addressed revenue volatility through the application of the unders and overs mechanism (UOM)²⁵ as part of the Annual Review process. Unlike the ACCC approach, IPART has

²¹ WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, p 8.

²² WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, p 8.

²³ WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, pp 2-3.

²⁴ WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, pp 8.

²⁵ The UOM adjusted charges within the determination period (during the Annual Review) to account for the holding costs of any under or over recovery of revenue faced by WaterNSW as a result of variable demand.

addressed revenue volatility through a revenue volatility allowance, which is already factored into charges in the 2017 Determination, separate to the Annual Review.²⁶

Our decision is consistent with the ACCC's 'pricing principles'

IPART's power to apply the WCIR to determine WaterNSW's regulated charges, including through the annual review process under Division 3 of Part 6 of the WCIR, is conferred through accreditation arrangements with the ACCC under Part 9 of the WCIR.²⁷ As a condition of our accreditation, IPART is required to apply the pricing principles set out in the 'Pricing Principles for pricing approvals and determinations under the Water Charge (Infrastructure) Rules 2010' published by the ACCC in July 2011 (**Pricing Principles Document**), in approving or determining WaterNSW's regulated charges under the WCIR.

In determining WaterNSW's regulated charges for the 2018-19 year, we have applied all pricing principles published by the ACCC that are relevant to that determination. Further, our determination is consistent with all pricing principles published by the ACCC, and the ACCC's commentary in the Pricing Principles Document.

Section 3 of the ACCC's Pricing Principles Document sets out the pricing principles that apply to determinations made under Part 6 of the WCIR. The pricing principles are distinguished from general commentary in section 3 by their inclusion in shaded boxes, and they are also listed discretely in Appendix B of the Pricing Principles Document. The only pricing principle of direct relevance is the principle set out in section 3.13 of the ACCC's Pricing Principles Document, which relates to 'demand or consumption forecasts'. That pricing principle sets out criteria a regulator must apply to assess a Part 6 operator's demand or consumption forecasts, including that they are calculated using an appropriate methodology, are reasonable, utilise the best available information, and take account of current demand and economic conditions.²⁸

IPART has applied the pricing principle in section 3.13 of the ACCC's Pricing Principles Document for the purpose of assessing the updated consumption forecasts submitted by WaterNSW in its application for annual review. No other pricing principles are directly relevant to IPART's determination of WaterNSW's regulated charges under rule 37(2) of the WCIR, and the WaterNSW Submission does not identify any pricing principle contravened by IPART's Draft Determination. In any event, our decision is consistent with all aspects of the ACCC's Pricing Principles Document.

Our decision is consistent with the scope of our powers under the WCIR

As outlined in Chapter 2, IPART has discretion to approve or determine WaterNSW's regulatory charges for the 2018-19 year under rule 37(2) of the WCIR. Rule 37(2) confers a limited discretion to vary charges from those set under the 2017 Determination in the following terms:

²⁶ IPART, *WaterNSW Review of Prices for Bulk Water Services from 1 July 2017 to 30 June 2021*, June 2017, p 6.

²⁷ This accreditation is set out in 'ACCC Final Decision: IPART Application for accreditation under Part 9 of the *Water Charge (Infrastructure) Rules 2010*' published by the ACCC on 23 September 2015.

²⁸ ACCC, *Pricing Principles for Price Approvals and Determinations under the Water Charge (Infrastructure) Rules 2010*, July 2011, pp 54-55.

“The Regulator must not approve regulated charges ... other than the regulated charges approved or determined [in the initial determination for the determination period] ... except to the extent, if any, that it is reasonably necessary to make variations to those charges having regard to:

(a) the changes in the demand or consumption forecasts set out in the application under rule 34; and

(b) price stability,”

(underlined for emphasis).

Our assessment and decision not to vary WaterNSW’s charges is consistent with our discretion under rule 37(2). We have had regard to the two mandatory considerations in rule 37(2), and decided on that basis that it is not ‘reasonably necessary’ to make variations to the charges set out in the 2017 Determination.

The ACCC’s 2014 Final Decision applies a different methodology to the 2017 Determination

The method used to set charges under the ACCC’s 2014 Determination, to which the annual reviews for 2015-16 and 2016-17 related, was designed to be adjusted each year to account for revenue volatility experienced by WaterNSW.²⁹ This is different to the IPART regulatory regime used to set charges under the 2017 Determination, to which this annual review for 2018-19 relates.

The ACCC’s 2014 Final Decision set actual charges for 2014-15, and **indicative charges** for 2015-16 and 2016-17. The charges for 2015-16 and 2016-17 under its Final Decision depended on the **updated volume forecasts**, the UOM and actual CPI movements:

“Bulk water charges for 2015-16 and 2016-17 will depend on actual CPI movements, volume forecasts and unders and overs, calculated according to the Form of Control Formulae.”³⁰

As a result of this approach, in addition to applying the criteria under rule 37(2) of the WCIR as part of the annual review process, the ACCC also applied the methodology in its 2014 Final Decision for adjusting charges using the Form of Control Formulae and CPI, in determining WaterNSW’s charges for 2015-16 and 2016-17.³¹ The ACCC applied the methodology in its 2014 Final Decision as a separate step (Step 1) to considering whether to vary WaterNSW’s charges under rule 37(2). As this ‘Step 1’ was required under its 2014 Final Decision, the ACCC applied that methodology to calculate charges before assessing whether it was ‘reasonably necessary’ to vary charges under rule 37(2).

The ACCC then considered the matters set out under rule 37(2) in respect of the charges adjusted according to the methodology from its 2014 Final Decision, by applying a:

- ▼ “‘changes in forecasts test’ in both Annual Reviews it considered charges should be varied on the basis of new interstate trade demand data^{32 33}; and

²⁹ ACCC, *ACCC Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, p 11.

³⁰ ACCC, *ACCC Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, p 62.

³¹ ACCC, *ACCC Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, p 62.

³² ACCC, *WaterNSW Annual Review of Regulated Charges: 2016-17 Final decision*, May 2016, p 21.

³³ ACCC, *WaterNSW Annual Review of Regulated Charges: 2015-16 Final decision*, May 2015, p 16.

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- ▼ “price stability test”. The ACCC specifically considered the impact on customer bills as a result of varying charges through the annual review, and whether price stability was grounds to ‘override’ its automatic update of charges using the Form of Control Formulae.

WaterNSW’s charges from 1 July 2017 to 30 June 2021 were set by IPART in June 2017. In setting these charges, IPART decided not to include a UOM (which applied under the ACCC’s Final Decision), but to provide WaterNSW with a revenue volatility allowance to mitigate the impact of demand volatility on WaterNSW’s revenues by providing it with a revenue volatility allowance. The revenue volatility allowance is equal to \$1.3 million in 2017-18 and \$1.27 million per year thereafter³⁴³⁵. Unlike the UOM, the revenue volatility allowance is not designed to be updated for actual sales volumes each year over the determination period.

IPART’s 2017 Determination set WaterNSW’s regulated charges for 4 years. As required under the WCIR, IPART must not approve any price variations to the 2017 Determination for 2018-19 except to the extent that it is **reasonably necessary** to make variations to those charges having regard to changes in demand or consumption forecasts set out in WaterNSW’s application, and price stability.

³⁴ IPART, *WaterNSW Review of Prices for Rural Bulk Water Services from 1 July 2017 to 30 June 2021*, June 2017, p 92.

³⁵ These are in \$2016-17.

5 Our decision to not vary regulated charges for 2018-19

This Chapter discusses our decision to not vary charges from those set under the 2017 Determination for 2018-19.

We made a decision:

- 1 To not vary regulated charges for all valleys and rural FRWS customers for 2018-19 from those set under the 2017 Determination.

Our decision is based on our assessment that it is not reasonably necessary to vary charges, having regard to changes in demand or consumption forecasts and price stability. In making this decision, we have considered WaterNSW's pricing application and the factors discussed in Chapters 3 and 4 for assessing whether it is 'reasonably necessary' to vary charges under rule 37(2) of the WCIR. In particular, we consider there is no evidence that the data for 2016-17 reflected a sustained shift in demand, and therefore, maintaining price stability outweighs any benefit of varying charges.

5.1 A sustained or structural shift in demand

We found no evidence to suggest that the data for 2016-17 represents a sustained or structural shift in water demand or availability. On 1 July 2016, a number of replacement, merged and new Water Sharing Plans (WSPs) commenced. We noted that there were small changes to the Murrumbidgee, NSW Murray and Lower Darling, Lachlan and Macquarie regulated river water sharing plans, but that these changes did not affect usage volumes or allocations of entitlement data for 2016-17, nor did we anticipate that there would be material structural changes in demand due to these changes.³⁶

5.1.1 Stakeholder comments

WaterNSW's submission to the Draft Report raised concerns over the usage volumes prior to the establishment of the WSPs in 2004. It states that volumes prior to 2004 are not representative of current usage volumes, as the "WSP's were introduced for most regulated river systems from 2004 with a reduction in long term diversions in mind. It is understood that the Government set a range of up to 10% reduction in diversions."³⁷

³⁶ NSW Government, *Replacement, merged and new water sharing plans commenced 1 July 2016*, at <http://www.water.nsw.gov.au/water-management/water-sharing/replacement-merged-new>, accessed on 11 April 2018.

³⁷ WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, p 11.

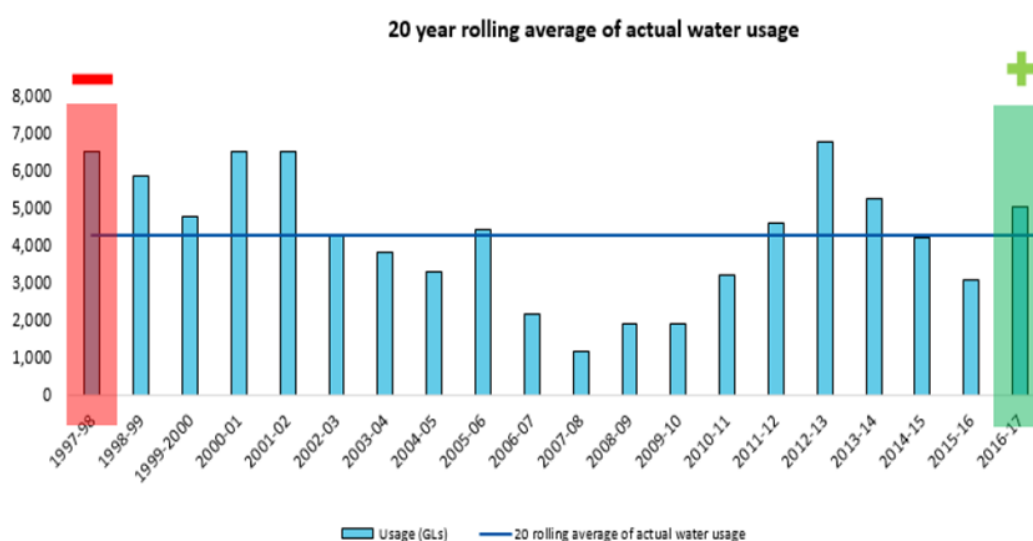
Our response to stakeholder comments

We maintain our view that in relation to the data for 2016-17 there is no evidence submitted by WaterNSW that there has been a structural shift in demand to justify a price change in this Annual Review.

In relation to historical data, we acknowledge WaterNSW's concerns but note that the introduction of the WSPs was soon followed by a drought and therefore when assessing the 20-years of usage data available we cannot isolate the impact of the introduction of the WSPs from the drought. In the years after the drought, such as 2011-12, 2012-13, 2013-14 and 2016-17 shown in Figure 5.1, usage volumes were greater than the 20-year average and were similar to levels recorded prior to 2004. Therefore, it is not clear what net impact (if any) the introduction of WSPs had on demand, given the potential impact of other drivers on demand.

We do, however, acknowledge that the 20-year average approach means that our forecast includes historical events such as the introduction of the WSPs, periods of below average rainfall (such as the drought) and periods of higher than average demand for water. Given the requirement that charges should only be updated through the Annual Review process if it is reasonably necessary, we consider it is more appropriate to potentially address these historical issues when forecasting demand in a price review process rather than automatically updating charges each year.

Figure 5.1 historical usage volumes



Data source: WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal*, May 2018, p 10.

WaterNSW's submission points out that in 2018-19 it expects the NSW water resource plans will be accredited by the Murray Darling Basin Authority and the NSW Government will need to demonstrate compliance with the sustainable diversion limit resulting from these plans.³⁸ They state that this could result in downward pressure on water usage to meet these requirements post 2018-19. At future reviews, we will consider whether this results in a sustained shift in usage.

³⁸ WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal*, May 2018, p 11.

5.2 Price stability and customer bill impacts

We acknowledge the trade-off or balance between the potentially competing objectives of updating charges to reflect more accurate forecast sales volumes, and price stability. Adjusting charges in response to business-as-usual volatility in water sales would introduce greater price volatility within the four-year determination period.

We have calculated the potential impacts on customer bills for 2018-19 in \$2018-19 in the event that we did update charges compared to maintaining charges for 2018-19 as set under the 2017 Determination. We found that updating charges under the Annual Review would vary typical bills between an increase of 5.1% for GS customers in the Lachlan Valley and a decrease of 3.7% for Border River customers (including BRC/MBDA charges). Lowbidgee Valley customers and raw water major and minor customers in the FRWS would have no change in bills, apart from inflation (CPI).

We recognise that if there were a sustained change in the data within a determination period, updating charges during the determination period would have the potential to reduce price shocks relative to waiting to update charges at the next periodic price review.

5.2.1 Stakeholder comments

WaterNSW's submission to the Draft Report raised the concern that not updating charges each year through the Annual Review process would result in price instability for customers.³⁹

Its concern is that changes not made during one annual review would accrue for the next review, risking volatile charges in either the subsequent annual reviews or periodic price determination.⁴⁰

Our response to stakeholder comments

We consider that there would need to be evidence of a *sustained change* in water sales volumes to ensure that varying charges under the Annual Review maintains price stability and mitigates price shocks at either the next Annual Review or periodic price reviews.

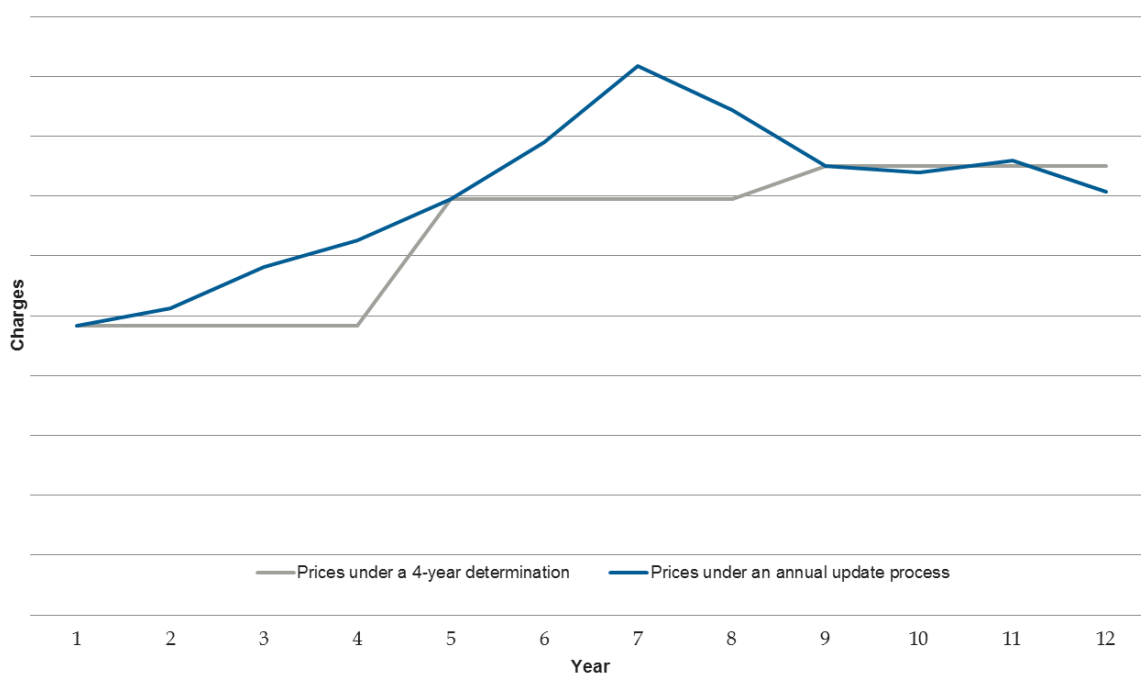
Business-as-usual water demand is volatile in rural NSW. Therefore, in the absence of a sustained change or structural shift in water sales volumes, there could be the case where we increase charges in one Annual Review and subsequently decrease charges in the next Annual Review. This would impose risks and costs on customers through higher price volatility and uncertainty.

Given we found no evidence that the data for 2016-17 represents a sustained or structural shift in water demand or availability, we do not consider it 'reasonably necessary' to vary charges, having regard to changes in demand and price stability.

³⁹ WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, p 9.

⁴⁰ WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, p 9.

Figure 5.2 Comparing charges set for four years against automatically updating charges each year



Data source: WaterNSW Information Update, March 2018; IPART Analysis

Note: Charges set under a 4-year determination are based on the 10 years of demand data immediately preceding that four year period. Charges set under an annual update process are based on the 10 years of demand data immediately preceding each year.

Figure 5.2 compares hypothetical fixed price paths against annually updated price paths based on WaterNSW’s actual demand data (controlling for all other variables). This analysis is for illustrative purposes as we have made a number of simplifying assumptions. We have used a 10-year historical average of actual demand due to data limitations and note that this results in higher annual price volatility than would be observed if used a 20-year average of actual demand. We have also used a constant target revenue requirement over the analysis period.

Our analysis shows hypothetical price paths for three distinct periods:

- ▼ Period 1 (year 1 to 4): in this example, annual updates result in a smooth transition to the charges in the next determination period. This is driven by high demand years rolling out and low demand years (associated with drought) rolling into the 10-year rolling average.
- ▼ Period 2 (year 5 to 8): in this example, annual updates result in a relatively large increase in charges followed by a decrease in charges. Under this scenario, there would be significant price instability over the period for customers.
- ▼ Period 3 (year 9 to 12): in this example, an increase in charges in one year is offset by a decrease in charges in the following year. In this case, there would be some price volatility, albeit not to the same degree as in Period 2.

We also note that, unlike the ACCC's approach, IPART's 2017 Determination does not include a UOM. Rather, IPART has included a revenue volatility allowance, which is factored into the charges set in the 2017 Determination and does not require annual price adjustments.⁴¹

5.2.2 Stakeholder comments

WaterNSW also disagrees with IPART's view that an updated 20-year rolling average would not provide a materially better estimate of actual demand in the next year.⁴²

Our response to stakeholder comments

We agree there are benefits of including the most up-to-date data in demand forecasts. However, we have assessed this benefit against the cost of introducing greater price volatility and have found that it is not reasonably necessary to update charges in 2018-19 to reflect updated demand forecasts.

WaterNSW also includes analysis which presents large increases in usage charges in the next price review compared to current usage charges. In Table 1 of its submission, it shows up to an 18.86% price increase in the Lachlan Valley at the next price review.⁴³⁴⁴ However, its method for calculating charges does not align to the method IPART undertakes to calculate usage charges.

Specifically, because WaterNSW uses a 6-year average of water sales volumes from 2011-12 to 2016-17 instead of a 20-year rolling average of water sales volumes that IPART uses to calculate usage charges, this analysis exaggerates the weight applied on each year of actual usage volumes by around 12%, which, in turn, creates greater price volatility (a 20-year rolling average gives a 5% weight to each year of data, whereas a 6-year rolling average gives around a 17% weight to each year of data).

⁴¹ IPART, *Review of Prices for Rural Bulk Water Services for WaterNSW – Final Report*, June 2017, p 6.

⁴² WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, p 10.

⁴³ In its scenario WaterNSW has defined the next price review as charges from 2018 to 2021.

⁴⁴ WaterNSW, *Submission to the IPART Annual Review of Regulated Charges 2018-19 Draft Report*, May 2018, p 12.

6 Charges to apply in 2018-19

We have determined that it is not reasonably necessary to make variations to WaterNSW's regulated charges set out in the 2017 Determination, having regard to the factors in rule 37(2) of the WCIR.

The charges that customers will pay in 2018-19 are set out below. These are based on the 2017 Determination charges presented in \$2018-19.⁴⁵

6.1 Bulk water entitlement and usage charges

Table 6.1 sets out our determination of bulk water entitlement and usage charges for high security (HS) and general security (GS) customers. These exclude MDBA and BRC charges, which are set out in Table 6.2.

Table 6.1 WaterNSW's bulk water charges for 2018-19 (\$2018-19)

Valley	HS fixed charge (\$/ML)	GS fixed charge (\$/ML)	Usage charge (\$/ML)
Border	5.54	2.06	5.66
Gwydir	11.52	3.62	12.35
Namoi	17.77	8.28	20.79
Peel	43.25	4.18	19.11
Lachlan	16.00	2.84	19.81
Macquarie	14.05	2.97	14.34
Murray	1.60	0.78	1.99
Murrumbidgee	3.07	1.15	3.44
Lowbidgee	0.00	0.82	0.00

Source: IPART, *Prices for Rural Bulk Water Services for WaterNSW – Determination*, June 2017, p 11, adjusted for inflation.

6.2 MDBA and BRC entitlement and usage charges

Table 6.2 sets out our determination of MDBA and BRC entitlement and usage charges.

Table 6.2 WaterNSW's MDBA/BRC charges for 2018-19 (\$2018-19)

Valley	HS fixed charge (\$/ML)	GS fixed charge (\$/ML)	Usage charge (\$/ML)
Border	4.80	1.78	0.82
Murray	7.56	3.70	1.56
Murrumbidgee	1.67	0.63	0.32

Source: IPART, *Prices for Rural Bulk Water Services for WaterNSW – Determination*, June 2017, p 12, adjusted for inflation.

⁴⁵ Inflation used to inflate the charges to \$2018-19 from \$2017-18 as presented in the 2017 WaterNSW Rural Determination is 1.9%.

6.3 Fish River Water Supply Scheme access and usage charges

Table 6.3 sets out our determination of access and usage charges for raw water and filtered water customers in the FRWS.

Table 6.3 FRWS rural customer charges for 2018-19 (\$2018-19)

FRWS	Access (\$/kL)	Usage ≤ MAQ (\$/kL)	Usage > MAQ (\$/kL)
Raw water - major customers	0.41	0.25	0.66
Raw water - minor customers	0.41	0.25	0.66
Filtered water - minor customers	0.79	0.48	1.27

Source: IPART, *Prices for Rural Bulk Water Services for WaterNSW – Determination, June 2017*, p 18, adjusted for inflation.



Appendices

A Formulas for updating charges in Annual Reviews

Boxes A.1, A.2 and A.3 (and the accompanying tables) present the formulas we use to update charges in an Annual Review. These formulas were also presented in Appendix C of the 2017 Final Report for our review of WaterNSW's rural bulk water charges from 1 July 2017.

These formulas are used in Appendix B to calculate indicative charges using 2016-17 actual water sales data (usage and entitlement volumes and allocation ratios) submitted by WaterNSW.

The formulas update charges by including an additional year of new actual, historical data available to determine forecasts for entitlement volumes, usage volumes and water allocation ratios. Both usage volumes and water allocation ratios are forecast by taking a 20-year rolling historical average of the latest data. The latest data used to calculate the forecasts is typically two years behind the year to which the forecast applies.

Box A.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):

$$HSEC_{i,t} = \frac{HSP_{i,t} \times Share_i \times Rev_{i,t}^{NRR}}{(HSP_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

- b) For general-security entitlements (\$/ML of entitlement):

$$GSEC_{i,t} = \frac{Share_i \times Rev_{i,t}^{NRR}}{(HSP_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

- c) For usage (\$/ML):

$$UC_{i,t} = \frac{(1 - Share_i) \times Rev_{i,t}^{NRR}}{EWU_{i,t}}$$

The terms used in the above formulas are defined in Table A.1.

Source: ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 68-69, and IPART analysis.

Table A.1 Description of terms used in Box A.1

Definitions	
<i>i</i>	Valley: Border, Gwydir, Namoi, Peel, Lachlan, Macquarie, Murray, or Murrumbidgee.
<i>t</i>	Year: 2018-19, 2019-20, or 2020-21.
$HSP_{i,t}$	High security premium for valley <i>i</i> , in year <i>t</i> , calculated as set out below.
<i>Share</i>	The share of entitlement charges in WaterNSW's tariff structure for valley <i>i</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>i</i> , in year <i>t</i> , given by the Building Block Model at the start of the determination period.
$EHSE_{i,t}$	The expected number of high-security entitlements issued for valley <i>i</i> , in year <i>t</i> .
$EGSE_{i,t}$	The expected number of general-security entitlements issued for valley <i>i</i> , in year <i>t</i> .
$EWU_{i,t}$	The expected water usage for valley <i>i</i> , in year <i>t</i> , based on a 20-year moving average of past water usage.
$HSEC_{i,t}$	High security entitlement charge for valley <i>i</i> , in year <i>t</i> .
$GSEC_{i,t}$	General security entitlement charge for valley <i>i</i> , in year <i>t</i> .
$UC_{i,t}$	Usage charge for valley <i>i</i> , in year <i>t</i> .

Source: ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 68-69 and IPART analysis.

The high security premium for valley *i*, in year *t*, $HSP_{i,t}$, is the product of the Security Factor $SF_{i,t}$, and the Reliability Ratio $RR_{i,t}$:

$$HSP_{i,t} = SF_{i,t} \times RR_{i,t}$$

The Security Factor for a valley, $SF_{i,t}$, is given in Table A.2.

Table A.2 Security Factors for each valley

Valley	Security Factor
Border	1.25
Gwydir	1.40
Namoi	1.25
Peel	6.54
Lachlan	2.50
Macquarie	1.88
Murray	1.31
Murrumbidgee	1.69

Source: IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, p 224.

Box A.2 Formulas for charges for FRWS customers

Customers of the Fish River Water Supply Scheme (FRWS) pay water charges in three parts:

- ▼ an access charge (the Minimum Annual Quantity (MAQ)) paid per kL of the customer's MAQ entitlement
- ▼ a charge for each kL of water usage that is less than or equal to the customers MAQ entitlement (in kL), and
- ▼ a charge for each kL of water usage that is greater than the customers MAQ.

FRWS charges are different for each water class (filtered or raw) and each customer category within each water class (minor and major customers).

The formulae that we have used to estimate the charges for each component of the FRWS for an Annual Review are described below.

$$Charge_{ix}^{MAQ\ entitlement} = \frac{Revenue_{ix}^{MAQ}}{MAQ\ level_{ix}} \quad (1)$$

$$Charge_{ix}^{usage \leq MAQ} = \frac{Revenue_{ix}^{usage \leq MAQ}}{Min(Usage_{ix}, MAQ\ level_{ix})} \quad (2)$$

$$Charge_{ix}^{usage > MAQ} = Charge_{ix}^{MAQ\ entitlement} + Charge_{ix}^{usage \leq MAQ} \quad (3)$$

Where in formula (2), $Revenue_{ix}^{usage \leq MAQ}$ is set out in formula (4) below:

$$Revenue_{ix}^{usage \leq MAQ} = Revenue_{ix}^{total} - Revenue_{ix}^{MAQ} - Calculated\ revenue_{ix}^{usage > MAQ} \quad (4)$$

Where in formula (4) $Calculated\ revenue_{ix}^{usage > MAQ}$ is set out in formula (5) below:

$$Calculated\ revenue_{ix}^{usage > MAQ} = Max(0, Usage_{ix} - MAQ\ level_{ix}) \times Charge_{ix}^{usage > MAQ} \quad (5)$$

Table A.3 Description of terms used in Box A.2

Definitions	
$Charge_{ix}^{MAQ\ entitlement}$	The MAQ entitlement charge per kL of entitlement for customer category <i>i</i> purchasing water class <i>x</i> .
$Revenue_{ix}^{MAQ}$	The required revenue to be collected from MAQ charges for customer category <i>i</i> purchasing water class <i>x</i> .
$MAQ\ level_{ix}$	The historical annual kL of MAQ entitlement by customer category <i>i</i> purchasing water class <i>x</i> .
$Charge_{ix}^{usage \leq MAQ}$	The charge for each unit of water usage under or equal to the MAQ level for customer category <i>i</i> purchasing water class <i>x</i> .
$Revenue_{ix}^{usage \leq MAQ}$	The required revenue to be collected from usage charges for customer category <i>i</i> purchasing water

Definitions

	class x.
$Usage_{ix}$	The amount of the historical water usage for customer category i purchasing water class x.
$Charge_{ix}^{usage>MAQ}$	The charge for each unit of water that is used after crossing the MAQ threshold for customer category i purchasing water class x.
$Revenue_{ix}^{total}$	The total required revenue to be collected from charges for customer category i purchasing water class x.
$Calculated\ revenue_{ix}^{usage>MAQ}$	The revenue collected from charging for usage in excess of the MAQ (at the value calculated in Formula 3) for customer category i purchasing water class x.

Source: IPART analysis.

Box A.3 Calculation of MDBA and BRC charges

In valley i , at time t , the allowed charges are:

- a) For high-security entitlements (\$/ML of entitlement):

$$HSEC_{i,t}^{MDBA/BRC} = \frac{HSP_{i,t} \times Share_i \times Rev_{i,t}^{MDBA/BRC}}{(HSP_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

- b) For general-security entitlements (\$/ML of entitlement):

$$GSEC_{i,t}^{MDBA/BRC} = \frac{Share_i \times Rev_{i,t}^{MDBA/BRC}}{(HSP_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

- c) For usage (\$/ML):

$$UC_{i,t}^{MDBA/BRC} = \frac{(1 - Share_i) \times Rev_{i,t}^{MDBA/BRC}}{EWU_{i,t}}$$

The terms used in the above formulas are defined in Table A.4.

Source: ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 75-77; IPART analysis.

Table A.4 Description of terms used in Box A.3

Definitions	
i	Valley: Border, Murray, or Murrumbidgee.
t	Year: 2018-19, 2019-20, or 2020-21.
$HSP_{i,t}$	High Security Premium for valley i , in year t , calculated as set out below.
$Share$	The share of entitlement charges in WaterNSW's MDBA/BRC tariff structure for valley i .
$Rev_{i,t}^{MDBA/BRC}$	The MDBA/BRC 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 determination 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.
$HSEC_{i,t}^{MDBA/BRC}$	High security MDBA/BRC entitlement charge for valley i , in year t .
$GSEC_{i,t}^{MDBA/BRC}$	General security MDBA/BRC entitlement charge for valley i , in year t .
$UC_{i,t}^{MDBA/BRC}$	MDBA/BRC 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 and IPART analysis.

The high security premium for valley i , in year t , $HSP_{i,t}$ is the product of the Security Factor SF_i , and the Reliability Ratio $RR_{i,t}$:

$$HSP_{i,t} = SF_i \times RR_{i,t}$$

The Security Factor for a valley, SF_i , is given in Table A.5 below.

Table A.5 Security Factors for each valley

Valley	Security Factor
Border	1.25
Murray	1.31
Murrumbidgee	1.69

Source: IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, p 228.

B Reviewing charges

We have considered WaterNSW's application⁴⁶ and have decided **not** to vary regulated charges from those set in the 2017 Determination. This decision is based on our assessment that it is **not reasonably necessary** to vary charges, having regard to changes in demand or consumption forecasts and price stability (Chapter 5). To inform this decision, we have undertaken analysis using 2016-17 actual water sales data. This Appendix presents our analysis where we have:

- ▼ Estimated indicative regulatory charges for 2018-19 using the updated water sales volumes.
- ▼ Compared WaterNSW's proposed charges to our indicative charges.

B.1 Indicative charges if they were updated

Tables B.1 to B.3 present our calculation of what WaterNSW's 2018-19 regulated charges would be if they were updated from the 2017 Determination to reflect updated forecast sales volumes (what we refer to as 'indicative charges'). These charges are in 2016-17 dollars, to allow comparability with the charges set under the 2017 Determination.

Table B.1 Comparison between WaterNSW's proposed charges and IPART's indicative bulk water charges for WaterNSW in 2018-19 (\$2016-17) (\$/ML)

Valley	WaterNSW's proposed charges	Indicative charges	Difference (%)
HS entitlement charge			
Border	5.07	5.08	0.2
Gwydir	11.04	11.04	0.0
Namoi	16.72	16.76	0.2
Peel	41.56	41.40	-0.4
Lachlan	14.87	14.87	0.0
Macquarie	13.33	13.33	0.0
Murray	1.54	1.54	0.0
Murrumbidgee	2.95	2.95	0.0
Lowbidgee	N/A	N/A	N/A
GS entitlement charge			
Border	1.98	1.98	0.0
Gwydir	3.48	3.48	0.0
Namoi	7.96	7.97	0.1
Peel	4.13	4.11	-0.5
Lachlan	2.78	2.78	0.0
Macquarie	2.86	2.86	0.0
Murray	0.75	0.75	0.0
Murrumbidgee	1.11	1.11	0.0
Lowbidgee	0.78	0.78	0.0
Usage charges			
Border	5.33	5.33	0.0
Gwydir	12.02	12.02	0.0
Namoi	19.90	19.90	0.0
Peel	17.99	17.99	0.0
Lachlan	20.16	20.16	0.0

⁴⁶ WaterNSW submission to IPART annual price review, March 2018.

Valley	WaterNSW's proposed charges	Indicative charges	Difference (%)
Macquarie	14.10	14.10	0.0
Murray	1.95	1.95	0.0
Murrumbidgee	3.39	3.39	0.0
Lowbidgee	N/A	N/A	N/A

Source: WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2018 and IPART analysis.

Table B.2 Comparison between WaterNSW's proposed charges and IPART's indicative MDBA/BRC charges for 2018-19 (\$2016-17) (\$/ML)

Valley	WaterNSW proposed charges	Indicative charges	Difference (%)
HS entitlement charge			
Border	4.39	4.39	0.0
Murray	7.27	7.27	0.0
Murrumbidgee	1.61	1.61	0.0
GS entitlement charge			
Border	1.71	1.71	0.0
Murray	3.56	3.56	0.0
Murrumbidgee	0.61	0.61	0.0
Usage charges			
Border	0.77	0.77	0.0
Murray	1.53	1.53	0.0
Murrumbidgee	0.31	0.31	0.0

Source: WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2018 and IPART analysis.

Table B.3 Comparison between WaterNSW's proposed charges and IPART's indicative FRWS charges for 2018-19 (\$2016-17) (\$/kL)

Valley	WaterNSW proposed charges	Indicative charges	Difference (%)
Access charges			
Raw water - major customers	0.39	0.39	0.0
Raw water - minor customers	0.39	0.39	0.0
Filtered water - minor customers	0.73	0.73	0.0
Usage ≤ MAQ charges			
Raw water - major customers	0.25	0.24	-4.0
Raw water - minor customers	0.25	0.24	-4.0
Filtered water - minor customers	0.44	0.55	25.0
Usage > MAQ charges			
Raw water - major customers	0.63	0.64	1.6
Raw water - minor customers	0.63	0.63	0.0
Filtered water - minor customers	1.35	1.28	-5.2

Source: WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2018 and IPART analysis.

B.2 Updated forecasts

Based on WaterNSW's updated actual sales data for 2016-17, we have updated forecasts for the following:

- ▼ water sales volumes
- ▼ HS and GS entitlement volumes, and
- ▼ HS and GS water allocation ratios.

B.2.1 Updated data for usage volumes to estimate water sales for 2018-19

Forecast usage volumes are used to calculate the usage charge for all MDB and Fish River customers. That is, in general terms, usage charges for each valley are calculated by dividing the target revenue to be recovered from usage charges by forecast usage volumes.

In the 2017 Determination, we generally forecast usage volumes as the 20-year historical average of usage volumes for each valley (ie, forecast usage for each year of the determination period was calculated as the annual average of usage volumes from 1996-97 to 2015-16). Updated forecast usage volumes are calculated by rolling forward the 20-year historical average – ie, using data from 1997-98 to 2016-17 to forecast usage for 2018-19. These updated forecasts can then be used to update usage charges.

Table B.4 shows the updated 20-year rolling averages of annual historical usage volumes.

Table B.4 Usage Volumes (ML)

Valley	2016-17 (actual full year data)	2017 Determination (20 year historical average 1996-97 to 2015-16)	2018-19 Annual Review (20 year historical average 1997-98 to 2016-17)
Border	232,303	148,174	151,299
Gwydir	332,713	262,135	259,040
Namoi	213,598	164,799	165,531
Peel	10,366	11,496	11,732
Lachlan	206,758	206,001	194,539
Macquarie	232,194	259,099	253,261
Murray	1,877,179	1,557,396	1,521,877
Murrumbidgee	1,902,516	1,736,133	1,694,482
Lowbidgee ^a	59,350	N/A	N/A
Fish River Water Supply Scheme			
Major Customer (raw) ^b	1,540	1,541	1,541
Minor customers (filtered)	66	116	110
Minor customers (raw)	71	50	50

^a We do not forecast usage volumes for the Lowbidgee Valley as this valley has a 100% fixed tariff structure.

^b to forecast usage volumes of the Major Customer (raw) (Energy Australia), we used a 15-year rolling average in the 2017 Determination due to limited data availability. We also decided at the time that as new data is created it would be added onto the average until it reaches a 20-year rolling average. For the annual review, we have used a 16-year rolling average. In this case, the impact of the first historical data point 'rolling off' is not relevant..

Source: WaterNSW Information Update, March 2018; WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2018 and IPART analysis.

B.2.2 Updated data for entitlement volumes to estimate forecast entitlement volumes for 2018-19

WaterNSW's customers hold water access entitlements in all valleys (except for Fish River). These are generally HS and GS entitlements, with the exception of Lowbidgee which has supplementary entitlements.

Forecast entitlement volumes are used to calculate the fixed (HS and GS entitlement) charges in the MDB valleys. In the 2017 Determination, we forecast entitlement volumes for each year of the determination period by using the latest available full year entitlement volume data. This was entitlement volumes for 2015-16.

The tables below show entitlement volumes for 2015-16 (ie, used to calculate charges in the 2017 Determination), 2016-17 and year-to-date volumes as of February 2018.

Table B.5 GS entitlement volumes (ML)

Valley	2015-16	2016-17	Year-To-Date February 2018
Border	263,238	263,218	263,281
Gwydir	509,665	509,665	509,665
Namoi	256,212	256,212	256,529
Peel	30,428	30,428	29,635
Lachlan	633,166	633,166	633,166
Macquarie	632,466	632,466	632,466
Murray	2,083,271	2,083,271	2,083,271
Murrumbidgee	2,267,963	2,267,963	2,267,963
Lowbidgee	747,000	747,000	747,000

Note: Lowbidgee entitlement volumes are supplementary entitlements.

Source: WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2018.

Table B.6 HS entitlement volumes (ML)

Valley	2015-16	2016-17	Year-To-Date February 2018
Border	3,121	3,141	3,141
Gwydir	26,920	26,920	26,920
Namoi	8,866	8,866	8,866
Peel	17,367	17,367	17,367
Lachlan	57,304	57,301	57,302
Macquarie	42,712	42,688	42,688
Murray	263,603	263,590	263,555
Murrumbidgee	438,328	438,328	438,328

Source: WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2018.

B.2.3 Updated data to forecast the High Security Premium for 2018-19

The fixed HS entitlement charge is levied on high security entitlement holders for each valley and incorporates a High Security Premium (HSP) 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.

$$HS \text{ entitlement charge} = GS \text{ entitlement charge} \times HSP$$

HS and GS water allocation rates are inputs in the HSP and can be updated through the Annual Review via the reliability ratio.

$$HSP = Security \text{ Factor} \times Reliability \text{ Ratio}^{47}$$

The reliability ratio for each valley is the ratio of the 20-year rolling average allocation rate of HS entitlements to the 20-year rolling average allocation rate of GS entitlements. The 20-year rolling average data is consistent with the data used to calculate the 20-year rolling average usage volumes (for usage forecasts). The updated HSP is calculated by updating the 20-year rolling average used in the 2017 Determination with water allocation ratios for GS and HS entitlement holders for 2016-17, the updated 20-year average being historical data from 1997-98 to 2016-17 (rather than the data used in the 2017 Determination of 1996-97 to 2015-16). The data used to update the reliability ratio is shown in Table B.7 for HS entitlement holders and Table B.8 for GS entitlement holders.

Table B.7 HS entitlement holder water allocation ratios

Valley	2016-17	2017 Determination Average (year 1 – 20)	Updated Forecast Average (year 2 – 21)
Border	100%	100%	100%
Gwydir	100%	100%	100%
Namoi	100%	100%	100%
Peel	100%	98%	98%
Lachlan	100%	83%	83%
Macquarie	100%	100%	100%
Murray	100%	95%	95%
Murrumbidgee	100%	97%	97%

Source: WaterNSW Information Update, March 2018; WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2018 and IPART analysis.

Table B.8 GS entitlement holder water allocation ratios

Valley	2016-17	2017 Determination Average (year 1 – 20)	Updated Forecast Average (year 2 – 21)
Border	112%	46%	49%

⁴⁷ The reliability ratios are fixed over the 2017 Determination period. This reflects the relative security of supply between HS and GS entitlements. The reliability ratios are based on data from each valley's respective Water Sharing Plan (WSP) and from secondary sources if no WSP is in place.

Valley	2016-17	2017 Determination Average (year 1 – 20)	Updated Forecast Average (year 2 – 21)
Gwydir	79%	44%	44%
Namoi	124%	58%	59%
Peel	100%	62%	64%
Lachlan	138%	37%	38%
Macquarie	100%	40%	40%
Murray	100%	61%	61%
Murrumbidgee	100%	62%	62%

Source: WaterNSW Information Update, March 2018; WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2018 and IPART analysis.

B.3 FRWS MAQs and customer numbers

In the FRWS, customers have a MAQ rather than a licensed entitlement. The fixed charge is based on the customer's MAQ. The MAQs are specified in the water sharing arrangements for the FRWS. The share of the water resource assigned to specific customers is specified in Schedule 3 of WaterNSW's Water Management Licence for the Fish River Scheme. The MAQs are analogous to entitlements in other valleys.

Table B.9 compares the MAQ megalitres that customers used in the 2017 Determination and the updated figures in WaterNSW's submission.

Table B.9 Minimum Annual Quantities (MAQ)

	MAQ 2017 Determination	MAQ Updated	Customers 2017 Determination	Customers Updated
Raw water major customer (ML)	8,184	8,184	1	1
Raw water minor customers (kL)	200	200	83	83
Filtered water minor customers (kL)	200	200	216	224

Source: WaterNSW submission to IPART annual price review, March 2018, p 7; IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, pp 110-111.

The updated MAQs are unchanged from those used in the 2017 Determination. WaterNSW's pricing application indicates that the number of filtered water minor customers has increased from 216 to 224. Updating 2018-19 charges for this update in customer numbers would reduce the fixed access charge for filtered water minor customers by \$0.03 (\$2016-17) compared with the charges for 2018-19 in the 2017 Determination.

C Customer bill impacts

The tables below compare expected average customer bills in 2018-19 under two scenarios:

- ▼ if charges are unchanged from those set in the 2017 Determination, and
- ▼ if charges are updated to the indicative charges calculated for this Annual Review, to reflect updated forecast sales volumes.

The estimated bills are presented in nominal dollars (ie, including inflation).⁴⁸

For the MDB valleys, our analysis of bills is based on:

- ▼ HS entitlement holders at 100% of usage, and
- ▼ GS entitlement holders at 60% of usage.⁴⁹

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.

Table C.1 Comparison of bulk water customer bills (\$2018-19) excluding MDBA/BRC charges

Valley	2017 Determination charges (\$)	Indicative updated charges (\$)	Difference (%)
HS Customers			
Small customers			
Border	1,120	1,083	-3.3
Gwydir	2,387	2,398	0.5
Namoi	3,856	3,815	-1.1
Peel	6,236	6,179	-0.9
Lachlan	3,581	3,644	1.8
Macquarie	2,839	2,854	0.5
Murray	359	363	1.1
Murrumbidgee	651	660	1.4
Lowbidgee	N/A	N/A	N/A
Medium customers			
Border	5,600	5,415	-3.3
Gwydir	11,935	11,990	0.5
Namoi	19,280	19,075	-1.1
Peel	31,180	30,895	-0.9
Lachlan	17,905	18,220	1.8
Macquarie	14,195	14,270	0.5
Murray	1,795	1,815	1.1
Murrumbidgee	3,255	3,300	1.4
Lowbidgee	N/A	N/A	N/A
Large customers			

⁴⁸ We have used an inflation of 1.9%.

⁴⁹ These variables are based on the bill impact approach we used in the WaterNSW 2017 Final Report. Source: IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, pp 183-184.

Valley	2017 Determination charges (\$)	Indicative updated charges (\$)	Difference (%)
Border	11,200	10,830	-3.3
Gwydir	23,870	23,980	0.5
Namoi	38,560	38,150	-1.1
Peel	62,360	61,790	-0.9
Lachlan	35,810	36,440	1.8
Macquarie	28,390	28,540	0.5
Murray	3,590	3,630	1.1
Murrumbidgee	6,510	6,600	1.4
Lowbidgee	N/A	N/A	N/A
GS Customers			
Small customers			
Border	546	538	-1.3
Gwydir	1,103	1,112	0.8
Namoi	2,075	2,072	-0.2
Peel	1,565	1,551	-0.9
Lachlan	1,473	1,547	5.1
Macquarie	1,157	1,178	1.8
Murray	197	200	1.2
Murrumbidgee	321	327	1.7
Lowbidgee ^a	82	82	0.0
Medium customers			
Border	2,728	2,692	-1.3
Gwydir	5,515	5,560	0.8
Namoi	10,377	10,358	-0.2
Peel	7,823	7,756	-0.9
Lachlan	7,363	7,736	5.1
Macquarie	5,787	5,891	1.8
Murray	987	999	1.2
Murrumbidgee	1,607	1,634	1.7
Lowbidgee ^a	410	410	0.0
Large customers			
Border	5,456	5,384	-1.3
Gwydir	11,030	11,120	0.8
Namoi	20,754	20,716	-0.2
Peel	15,646	15,512	-0.9
Lachlan	14,726	15,472	5.1
Macquarie	11,574	11,782	1.8
Murray	1,974	1,998	1.2
Murrumbidgee	3,214	3,268	1.7
Lowbidgee ^a	820	820	0.0
Fish River Water Supply Scheme			
Raw water - major customers	3,741	3,741	0.0
Raw water - minor customers	399	399	0.0
Filtered water - minor customers	625	657	5.0

^a Lowbidgee has supplementary entitlements

Source: IPART analysis.

Table C.2 Comparison of MDBA/BRC customer bills (\$2018-19), excluding WaterNSW's bulk water charges

Valley	2017 Determination charges (\$)	Indicative updated charges (\$)	Difference (%)
HS Customers			
Small customers			
Border	562	536	-4.6
Murray	912	916	0.4
Murrumbidgee	199	200	0.5
Medium customers			
Border	2,810	2,680	-4.6
Murray	4,560	4,580	0.4
Murrumbidgee	995	1,000	0.5
Large customers			

Valley	2017 Determination charges (\$)	Indicative updated charges (\$)	Difference (%)
Border	5,620	5,360	-4.6
Murray	9,120	9,160	0.4
Murrumbidgee	1,990	2,000	0.5
GS Customers			
Small customers			
Border	227	225	-0.8
Murray	464	467	0.7
Murrumbidgee	82	82	0.0
Medium customers			
Border	1,136	1,127	-0.8
Murray	2,318	2,335	0.7
Murrumbidgee	411	411	0.0
Large customer			
Border	2,272	2,254	-0.8
Murray	4,636	4,670	0.7
Murrumbidgee	822	822	0.0

Source: IPART analysis.

D Target revenue requirement – 2017 Determination

Table D.1 Revenue requirement excluding MDBA/BRC revenue (\$'000) (\$2016-17)

Valley	2017-18	2018-19	2019-20	2020-21
Border	1,344.77	1,344.77	1,344.77	1,344.77
Gwydir	5,187.19	5,187.19	5,187.19	5,187.19
Namoi	5,486.65	5,486.65	5,486.65	5,486.65
Peel	1,055.94	1,055.94	1,055.94	1,055.94
Lachlan	6,536.13	6,536.13	6,536.13	6,536.13
Macquarie	5,952.93	5,952.93	5,952.93	5,952.93
Murray	4,947.20	4,947.20	4,947.20	4,947.20
Murrumbidgee	9,568.66	9,568.66	9,568.66	9,568.66
Lowbidgee	585.59	585.59	585.59	585.59
Misc revenue				
Border	0.42	0.42	0.42	0.43
Gwydir	2.76	2.92	3.04	3.12
Namoi	2.97	3.17	3.31	3.37
Peel	0.58	0.63	0.66	0.69
Lachlan	4.39	4.65	4.86	5.05
Macquarie	3.51	3.67	3.80	3.92
Murray	3.25	3.23	3.24	3.26
Murrumbidgee	4.84	5.49	6.05	6.56
Lowbidgee	0.25	0.48	0.71	0.92

Source: IPART analysis.

Table D.2 MDBA/BRC revenue requirement (\$'000) (\$2016-17)

Valley	2017-18	2018-19	2019-20	2020-21
Border	580.75	580.75	580.75	580.75
Murray	11,669.02	11,669.02	11,669.02	11,669.02
Murrumbidgee	2,609.04	2,609.04	2,609.04	2,609.04

Source: IPART analysis.

Table D.3 FRWS revenue requirement (\$'000) (\$2016-17)

Valley	2017-18	2018-19	2019-20	2020-21
FRWS	3,755.02	3,755.02	3,755.02	3,755.02

Note: This is the revenue requirement for customers in the FRWS that are in scope of this review.

Source: IPART analysis.

E Background information

WaterNSW (formerly State Water Corporation) delivers bulk water to irrigators and other licence holders on regulated rivers across NSW.⁵⁰ WaterNSW develops and maintains infrastructure and supplies raw water to rural NSW and the Greater Sydney area.

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 (SCA) and transferred its functions to WaterNSW.

We regulate WaterNSW's charges 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.

E.1 2017 Determination and the Annual Review

In June 2017, IPART released its Final Determination on WaterNSW's charges for the 2017-18 to 2020-21 determination period (the 2017 Determination). This set the target revenue requirement for each year of the determination period and set charges to recover this revenue amount. The 2017 Determination also included a framework and formulae for calculating updated charges for subsequent years of the determination period, as part of the Annual Review.

The charges set for each year of the 2017 determination period used the most up-to-date data available at the time. This was actual usage volumes, entitlements and water allocation percentages up to the 2015-16 financial year. The Annual Review process allows IPART to update charges to reflect updated data for usage volumes, entitlements and water allocation ratios.

E.1.1 Revenue requirement

The 'building block' method was used in the 2017 Determination to calculate WaterNSW's notional revenue requirement. The method determines the total efficient costs by aggregating an allowance for a number of components, which reflect the business' operations and ability to deliver its regulated services. These components include:

- ▼ operating expenditure
- ▼ a return on the assets
- ▼ a return of the assets (regulatory depreciation)

⁵⁰ A regulated river is one where downstream flows are regulated by a major storage or dam to supply irrigation water. Source: Department of Industry - Water, *Regulated rivers*, <http://www.water.nsw.gov.au/water-management/monitoring/regulated-rivers>, accessed March 2018.

- ▼ an allowance for meeting tax obligations, and
- ▼ an allowance for working capital.

For WaterNSW specifically, there are a number of additional items which are also included in the notional revenue requirement. These are:

- ▼ Murray-Darling Basin Authority (MDBA) and Border Rivers Commission (BRC) costs
- ▼ a revenue volatility allowance
- ▼ costs related to the recovery of the Unders and Overs Mechanism (UOM)⁵¹, and
- ▼ irrigation corporations and districts (ICD) rebates.

In the 2017 Determination, IPART set charges to reflect a 'smoothed' revenue requirement (ie, target revenue requirement), so that for each year of the determination period prices would follow a determined price path (ie. constant in real terms). The target revenue requirement is the actual revenue we expect WaterNSW to generate from charges each year.

The target revenue requirement will be maintained over the 4-year determination period and is not within the scope of the Annual Review.

Refer to Appendix D for the target revenue requirement by valley.

E.1.2 Tariff structure

WaterNSW currently levies a two-part tariff for most valleys⁵² comprised of:

- ▼ A **fixed charge**– 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).
- ▼ A **usage charge**– a charge based on the quantity of water recorded as taken for a water access licence in the billing period (\$ per ML of water taken or usage).

For 2018-19, most valleys maintain the 40:60 fixed to variable tariff structure with the exception of Peel valley and the FRWS, which have an 80:20 fixed to variable tariff structure, and Lowbidgee valley which has a 100:00 tariff structure.

MDBA and BRC charges are based on an 80:20 fixed to variable tariff structure. These are levied in addition to the bulk water charges in the Border (BRC), Murray (MDBA) and Murrumbidgee (MDBA) valleys.

⁵¹ The UOM was discontinued for the 2017 Determination and replaced with the revenue volatility allowance. However, to address the existing UOM balance, IPART incorporated a UOM payback amount in prices so that the balances can be recovered over a 12-year period.

⁵² The exception is Lowbidgee where WaterNSW only levies a fixed charge (customers hold supplementary licences that entitle them to water use only when access water is available).

Glossary

2017 Determination	Our pricing Determination for WaterNSW Rural prices applying from 1 July 2017 to 30 June 2021
2017 determination period	The period commencing 1 July 2017 and running to 30 June 2021
ACCC	Australian Competition and Consumer Commission
ACCC's 2014 Final Decision	ACCC's pricing decisions for WaterNSW Rural prices applying from 1 July 2014 to 30 June 2017
ACCC's 'pricing principles'	<i>Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010, July 2011</i>
BRC	Border Rivers Commission
CPI	Consumer Price Index
DPI Water	Department of Industry - Water
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
HS	High security
HSP	High security premium
ICD	Irrigation corporations and districts
IPART	Independent Pricing and Regulatory Tribunal of NSW

IPART Act	<i>Independent Pricing and Regulatory Tribunal Act 1992 (NSW)</i>
kL	Kilolitre
MDB	Murray-Darling Basin
MDBA	Murray-Darling Basin Authority
MAQ	Minimum Annual Quantity
ML	Megalitre
NRR	Notional revenue requirement. Revenue requirement set by IPART that represents the efficient costs of providing WaterNSW's regulated monopoly services.
NSW	New South Wales
RTP	Risk transfer product
SCA	Sydney Catchment Authority (now part of WaterNSW)
Target revenue	The revenue WaterNSW is expected to generate from charges set by IPART.
UOM	Unders and overs mechanism
Water Act	<i>Water Act 2007 (Cth)</i>
WCIR	<i>Water Charge (Infrastructure) Rules 2010</i> made under s 92 of the <i>Water Act 2007 (Cth)</i>
WSPs	Water Sharing Plans
YTD	Year-to-date