IPART Independent Pricing and Regulatory Tribunal | NSW

Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline

Final Technical Report

November 2022

Water »

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Further information on IPART can be obtained from IPART's website.

Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders, past, present and emerging. We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

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Chapter 1

Introduction

01

1.1 Overview of our decisions

IPART has set prices for water transport services supplied by WaterNSW via the Murray River to Broken Hill Pipeline (the Pipeline). These prices will apply from 1 January 2023 until 30 June 2026 to WaterNSW's customers, who are:

- Essential Water, the supplier of water and wastewater services to customers in the Broken Hill region
- a small number of offtake customers located along the Pipeline.

Section 1.1.3 discusses the prices we have set for each customer group.

Under our prices, bills for Essential Water and offtake customers[a] will decrease by around 21% and 16% respectively (before inflation) by the end of the 2022 determination period

To set these prices, we considered the ongoing efficient costs of running and maintaining the Pipeline, the number of customers who will share these costs and the quantity of services they will use. Section 1.1.1 discusses key drivers of efficient costs for the next 4 years.

This Final Technical Report provides details of our analysis and reasons for our decisions. We have also prepared a Final Report, which provides a summary of our key decisions and customer outcomes.

Prices that WaterNSW charges Essential Water for transporting water from the Murray River are a key factor when reviewing the prices that Essential Water's customers in the Broken Hill region pay for water and wastewater services. For this reason, IPART is reviewing both sets of prices at the same time. For more information about this review see our Essential Water Final Report.

1.1.1 Our approach to setting prices for this review

When we set prices for a regulated business like the Pipeline, we generally aim to set prices to cover the efficient cost of providing services to customers. We assessed the costs of providing water transportation services in the Broken Hill region and engaged expert consultants to review and provide advice on whether WaterNSW's proposed costs for the Pipeline are efficient. We looked at the Pipeline's costs over the last 3 years (the 2019 Determination), as well as WaterNSW's proposed costs for the Pipeline over the next 4 years (the 2022 Determination) and considered:

- the efficient costs of operating a water pipeline business in Broken Hill
- the number of customers who will share these costs and the quantity of services they will use.

[a] We have used the bills for a Medium (1 ML per year) offtake customers. For more information on offtake customers' bills see Table 8.2.

Based on our assessment of the Pipeline's costs, our decision is to set the revenue requirement at around $21 million on average per year, over the next 4 years. This is around 13% lower than WaterNSW's proposed revenue requirement. There are 2 factors driving the difference between WaterNSW's proposed revenue requirement and our decision on the revenue requirement:

1. The real rate of return (the WACC) we have applied to estimate the Pipeline's return on assets. We used our standard method to apply a WACC of 2.8% which is lower than WaterNSW's proposed WACC of 3.7%.
2. We have largely accepted WaterNSW's proposed operating and capital costs, but with a higher allowance for energy costs reflecting significant increases in electricity prices since WaterNSW submitted its pricing proposal in June 2021. Other changes to the expenditure allowance reflect reallocation of costs (e.g. between operating and capital expenditure) and the application of a continuing efficiency factor incentivising WaterNSW to find opportunities to provide better value for money for its customers.

Electricity prices have increased significantly since WaterNSW's pricing proposal in June 2021. This resulted in a total operating expenditure allowance for the 2022 determination period that is around 17% higher than originally proposed by WaterNSW.

We also looked at the amount of water the Pipeline will transport for its customers over the next 4 years and found them to be broadly reasonable. We made small adjustments in order to align these forecasts with our concurrent review of costs and prices of Essential Water, which is the main customer of the Pipeline.

1.1.2 We consulted extensively with stakeholders

The first step of our price review was to consider WaterNSW's pricing proposal, which it submitted to IPART in June 2021. We then conducted extensive consultation with WaterNSW and other stakeholders, including releasing an Issues Paper, a Draft Report and a Draft Technical Report, to which we invited written submissions and online feedback. In September 2022, we also held a public hearing in Broken Hill.

We took all stakeholder views into account in making our final decisions (Figure 1.1). WaterNSW's pricing proposal, our Issues Paper, Draft Report, Draft Technical Report, stakeholder submissions and the public hearing transcript are available on our website.

Figure 1.1 Timetable for this review

1.1.3 Our decisions on water transportation prices and bills for Essential Water and offtake customers

Tables 1.1 and 1.3 set out our decisions on WaterNSW's water transportation prices and bills, before inflation. The usage price is increasing because WaterNSW's energy costs are now higher. However, the access price (for Essential Water) and fixed price (for offtake customers) is decreasing due to WaterNSW's lower financing costs driven by us applying a WACC of 2.8%.

Our decisions will result in overall decreases in total bills over the upcoming determination period. This is because the increase in the usage price is more than offset by decreases in the access or fixed prices, which represent a larger share of bills. For example, yearly bills for medium-sized offtake customers would decrease by around 16% (before inflation) by the end of the 2022 determination period compared to current bills.

Prices and bills for Essential Water

Table 1.1 IPART prices and bills for Essential Water ($2021-22) – without inflation

	2021-22 (current)	2022-23[a]	2023-24	2024-25	2025-26	2021-22 to 2025-26 % change
IPART decision						
Usage price ($/ML)	212.52	499.14	403.39	350.46	351.20	65.3%
Access price ($/day)	67,281	50,798	50,798	50,798	50,798	-24.5%
Total bill	25,747	23,542	20,822	20,471	20,467	-20.5%

a. We have delayed the commencement of new prices until 1 January 2023, therefore the access price component of the total bill will be higher in 2022-23 due to prices from the 2019 determination continuing for an extra 6 months. However, we have decreased the access price further in subsequent years to compensate for this.

Note: The usage price for Essential Water includes an allowance for evaporative issues.
Source: IPART analysis.

We adjust WaterNSW's prices each year for inflation. Table 1.2 shows our water transportation prices for Essential Water that will apply in 2022-23, including inflation of 5.1%.

Table 1.2 Water transportation prices for Essential Water ($2022-23) – with inflation

	2022-23	Change from current to 2022-23
Usage price ($/ML)	524.60	146.8%
Access price ($/day)	53.389	-20.6%

Source: IPART analysis.

Prices and bills for Essential Water are currently covered by a subsidy paid by the NSW Government on behalf of NSW taxpayers. This is discussed in more detail in our concurrent review of prices that Essential Water can charge for water and wastewater services in Broken Hill.

Prices and bills for offtake customers

Table 1.3 IPART prices and bills for offtake customers ($2021-22) – without inflation

	2021-22 (current)	2022-23[a]	2023-24	2024-25	2025-26	2021-22 to 2025-26 % change
IPART decision						
Usage price ($/kL)	0.21	0.50	0.40	0.35	0.35	65.3%
Fixed price ($/day)	20.78	16.93	16.93	16.93	16.93	-18.5%
Bill for small customers (0.5 ML)	7,691	7,138	6,398	6,355	6,355	-17.4%
Bill for medium customers (1 ML)	7,797	7,387	6,600	6,530	6,531	-16.2%
Bill for large customers (5 ML)	8,647	9,384	8,214	7,932	7,936	-8.2%

a. We have delayed the commencement of new prices until 1 January 2023, therefore the fixed price component of the total bill will be higher in 2022-23 due to prices from the 2019 determination continuing for an extra 6 months. However, we have decreased the fixed price further in subsequent years to compensate for this. For large offtake customers, the combined effect of the delay and increase in the usage price will result in higher bills for the first year before bills reduce to levels below the current level in the subsequent years of the determination period.

Source: IPART analysis.

Table 1.4 shows our water transportation prices for offtake customers that will apply in 2022-23, including inflation of 5.1%.

Table 1.4 Water transportation prices for offtake customers ($2022-23) – with inflation

	2022-23	Change from current to 2022-23
Usage price ($/kL)	0.52	146.8%
Fixed price ($/day)	17.79	-14.4%

Source: IPART analysis.

The main change between our draft and final prices is the usage price. In the Draft Report, we proposed reducing the usage price by 3.0% (before inflation). For the Final Report, we have increased the usage price because we have revised and increased WaterNSW's energy costs (see Chapter 3).

1.2 Structure of this report

The rest of this report provides more information about how we reached our decisions, and how these decisions compare to WaterNSW's pricing proposal:

Chapter	
02	sets out our decisions on the length of the determination period, form of regulation and our approach to calculating the revenue requirement
03	explains our decisions on operating expenditure allowances
04	explains our decisions on capital expenditure which informs capital allowances
05	sets out our decisions on the other cost allowances and total NRR
06	explains our decisions on forecast water sales and customer numbers used to set prices
07	sets out our decisions on prices for Essential Water and offtake customers
08	present customer bill impacts of our pricing decisions, and implications on WaterNSW and the environment.

1.3 List of decisions

Decisions

18.	For services to offtake customers, to set an allowance for return on assets of about $35,000 over the 2022 determination period (shown in Table 5.9). This is calculated by using: – the RAB values shown in Table 5.6 – a real post-tax weighted average cost of capital of 2.8% – a sampling date of 31 March 2022 for market observations as outlined in Appendix B.	59
19.	To set a true-up for differences between the forecast and actual cost of debt over the 2019 determination period of – -$3.1 million for services to Essential Water – zero for services to offtake customers.	62
20.	To set the working capital allowance for services to Essential Water and offtake customers for the 2022 determination period as shown in Table 5.10.	63
21.	To adopt the regulatory tax allowance for services to Essential Water and offtake customers as shown in Table 5.11, using: – a tax rate of 30% – IPART's standard methodology.	64
22.	To accept WaterNSW's proposed customer and offtake numbers over the 2022 determination period as shown in Table 6.1.	69
23.	To set the Pipeline's total water sales volumes as shown in Table 6.2, which are marginally lower than WaterNSW's proposed forecasts by around 0.5% per year.	70
24.	To maintain WaterNSW's current price structures for Essential Water and offtake customers.	77
25.	To increase the usage price to $351 per ML for Essential Water and $0.35 per kL for offtake customers (before inflation) by the end of the 2022 determination period.	79
26.	To decrease the access price for Essential Water to $50,798 per day in the first year of the 2022 determination period and then hold it constant (before inflation) over the following 3 years.	79
27.	To decrease the fixed price for offtake customers to $16.93 per day in the first year of the 2022 determination period and then hold it constant (before inflation) over the following 3 years.	79
28.	To continue to defer regulating shutdown, restart and standby prices for Essential Water.	80
29.	To continue to allow unregulated pricing agreements between WaterNSW and offtake customers.	81

Chapter 2

Regulatory setting

02

Summary of our decisions for regulatory settings

We set prices for a 4-year determination period

Our decision is to set WaterNSW's prices for a 4-year period. We did not accept WaterNSW's proposed 5-year determination period. We consider 4 years balances providing price certainty for customers, while also allowing for an earlier opportunity to manage uncertainty in water demand or WaterNSW's operating environment.

The timing of the WaterNSW and Essential Water reviews will remain aligned. This is to ensure that related issues between the 2 reviews can be considered at the same time.

We continued to set maximum prices

We accepted WaterNSW's proposal to set maximum prices (i.e. price caps), as we consider this provides price certainty to both customers and WaterNSW.

We used the building block approach to calculate WaterNSW's notional revenue requirement. This approach involves breaking down WaterNSW's costs into operating and capital allowances, tax and working capital allowances, and making separate calculations for these allowances. The sum of the building blocks represents the total efficient costs WaterNSW should incur in delivering its services.

We used a 3-step process to assess WaterNSW's proposed expenditure

This process is consistent with our approach for other recent water reviews. It involves making scope, catch-up and continuing efficiency adjustments.

We did not accept WaterNSW's proposed cost pass throughs

WaterNSW proposed mechanisms to 'pass-through' unexpected costs to their customers if specific events occur (e.g. natural disaster, regulatory changes). We consider that WaterNSW's proposed cost pass-throughs would place too much risk on customers and have made a decision not to accept them.

Before setting prices, we need to decide how long to set prices for and the 'form of regulation' to use to regulate prices.

2.1 We set prices for a 4-year determination period

Our decision is:

1. To adopt a 4-year determination period and to delay the commencement of new prices until 1 January 2023.

For each water pricing review, we need to decide how long to set prices for (the length of the determination period), which is generally between 1 and 5 years. Our decision is to adopt a 4-year determination period, which we consider provides a balance between reducing regulatory burden on WaterNSW and managing the risks of unforeseen events or circumstances. When deciding the length of the determination period, we consider:

- our confidence in demand forecasts for water transportation services, which we have used to set prices
- the risk of substantial changes in the industry
- the need for price flexibility and incentives to increase efficiency
- the need for regulatory certainty and financial stability
- the timing of other relevant reviews
- the views of stakeholders.

Last time we set prices in 2019, we decided a 3-year period was necessary because there was uncertainty with the operation of WaterNSW's new Pipeline.

Because the Pipeline has been in operation for 3 years and demand forecasts are more stable, WaterNSW proposed a 5-year determination period for this review. It considered its operating conditions had become more stable, allowing it to forecast water use and costs with more certainty.[1]

While we agree there is less uncertainty in forecasts from the Pipeline, we consider some uncertainty still remains around the effect of a possible new mine, which is estimated to require 1GL per annum from 2023 or 2024[2] (an increase of around 20% in WaterNSW's total water sales). We consider a 4-year period will provide an opportunity for WaterNSW to assess the impact of the mine if it eventuates.

In submissions to our Draft Technical Report, WaterNSW maintained its position from its pricing proposal. It supported a 5-year determination period rather than our draft decision to set a 4-year determination period. However, if we did not accept its risk mitigation measures (see section 2.4), WaterNSW proposed we set a 3-year determination period so it can manage risk in the outer years.[3]

As outlined below, we have not accepted WaterNSW's requested risk mitigation measures. Without these measures, WaterNSW requested a 3-year determination period, while Essential Water accepted a 4-year determination period in its submission to our Draft Report.[4]

We still consider a 4-year determination period balances what WaterNSW and Essential Water have requested, maintains alignment between their reviews, minimises regulatory costs and mitigates uncertainty over revenues and costs.

We are introducing a new regulatory framework for the next price review. Under this framework, we have decided to generally shift from a principles-based approach to setting determination length (which usually results in a 4-year price period) to a 5-year price determination as a default. We consider this will encourage water businesses to conduct good long-term, strategic planning while developing their pricing proposals.[5]

2.1.1 New prices will commence on 1 January 2023

As previously announced on our website, we delayed the commencement of new prices under the 2022 Determination until 1 January 2023.[a] The prices we present in this report will apply from 1 January 2023 to 30 June 2026, which is a 3.5 year period.

In setting prices for this review, we have factored in:

- the final WACC that would have applied had we set prices from 1 July 2022
- the latest available energy cost forecasts
- an adjustment for foregone inflation in the period from 1 July 2022 to 31 December 2022
- an adjustment to reflect that WaterNSW will be over-recovering its revenue requirement for the period from 1 July 2022 to 31 December 2022 (as bills based on current prices are higher than bills based on the prices we present in this report).

We outline these adjustments in section 5.9.

Our final prices reflect the overall costs the Pipeline would incur over the next 4 years on a net present value neutral basis. For this reason, we continue to refer to the length of the determination as a 4-year period throughout this report.

In its response to our Draft Report, WaterNSW supported our intention to make a revenue adjustment due to the 6-month delay to the price review. It proposed we include any material cost variations in this revenue adjustment to ensure it is symmetric. This would include any increase in its energy costs.[6]

Our view is that both utilities and customers should be no better or worse off as a result of the 6-month delay. Therefore, we are adjusting for the difference in revenue if we had applied final prices from 1 July 2022, instead of setting them 1 January 2023. As bills based on current prices are higher than bills based on final prices, we have made an adjustment for the revenue over-recovery.

[a] In February 2022, we decided to delay the introduction of new prices from 1 July 2022 to 1 January 2023 due to the impacts of the Covid-19 pandemic.

The final prices factor in WaterNSW's efficient costs, including the final WACC for prices from 1 July 2022. However, recognising the rapidly changing circumstances in energy markets we used more recent energy cost forecasts, Due to the introduction of a true-up mechanism for benchmark energy costs (discussed in section 3.4), customers will ultimately pay for higher energy costs. Our decision to base prices on the most recent (higher) forecasts changes the timing rather than the quantum of costs recovered and reduces the possibility of 'bill shock' in the next determination period.

2.2 We continued to use price caps

Our decision is:

2. To set maximum prices for WaterNSW services in each year of the 2022 determination period (a price cap).

There are several forms of price control that can be used to review or adjust prices for regulated businesses. These include maximum prices (or price caps), revenue caps and combinations of these 2 approaches.

Our decision is to accept WaterNSW's proposal to continue to set maximum prices.[7] We consider price caps provide transparency and pricing certainty to customers and WaterNSW. Price caps also help ensure prices reflect efficient costs, and reflect the long-run cost of providing the service.

In response to the Draft Report, WaterNSW supports our approach to regulating Pipeline prices.[8]

2.3 We used the building block approach

We continued to use the building block approach to calculate WaterNSW's notional revenue requirement. This approach breaks down WaterNSW's costs into the following components (or building blocks):

- **operating allowance**, to cover costs such as labour and administration costs
- **capital allowance**, comprised of:
  - return on assets that WaterNSW uses to provide its services
  - regulatory depreciation (or a return of the assets that WaterNSW uses to provide its services), which involves deciding on the appropriate asset lives and depreciation method
- **tax allowance**, which approximates the tax liability for a comparable commercial business
- **working capital allowance**, which represents the holding cost of net current assets.

The annual sum of these building blocks is the notional revenue requirement and is our assessment of the total efficient costs WaterNSW should incur in delivering its services.

We then convert WaterNSW's notional revenue requirement into prices by setting the target revenue requirement for each year of the determination period – that is, the actual revenue we expect WaterNSW to generate from prices and charges for that year. We consider a range of factors including price levels, the rate prices would change and any other impacts on WaterNSW and water users.

Figure 2.1 shows our approach to calculating the notional revenue requirement and how we set prices.

Figure 2.1 The building block approach

2.4 We did not accept WaterNSW's proposed cost pass-throughs

Our decision is:

3. To not accept WaterNSW's proposal to have cost pass-through mechanisms for regulatory change, insurance events and catastrophic events.

WaterNSW proposed mechanisms to 'pass-through' unexpected costs to its customers if specific events occur (e.g. natural disaster, regulatory changes).[9]

Our decision is to not accept WaterNSW's proposed cost pass-throughs. In a competitive market, no business can automatically pass onto customers all unexpected cost increases. They need to look carefully at how they minimise the impact on customers, because that is what their competitors will be doing.

Allowing monopoly businesses to automatically pass on the full amount of unexpected cost increases is risky. It takes away the incentive for them to do what they can to avoid the increase and minimise its impact on customers. Both of these incentives are important to the long-term interests of customers.

We have not yet seen any proposals from WaterNSW that seriously attempt to retain these incentives in the way cost pass-throughs are designed. If an unexpected event does have a large negative impact on WaterNSW's financial position, it may be more appropriate for it to request an early price review.

In its response to our Draft Report, WaterNSW continued to request that we include risk mitigation measures to manage unexpected costs. It considered we should apply our proposed approach to risk management from the new regulatory framework – in particular, access to cost pass-throughs and partial reopeners – in this Final Report.

In WaterNSW's view, adopting this element of the new regulatory framework would address IPART's concerns around revenue risk should a new mine open. It would also represent a fair sharing of risk between WaterNSW and its customers.[10]

We do not agree with WaterNSW's requested risk mitigation measures for this price review. Under the new regulatory framework, we will provide water businesses with mechanisms to manage their changing revenue needs over the short and long-term. At this stage, WaterNSW has not shown how the proposed risk mitigation measures would share revenue risk in a way which promotes the long-term interests of its customers.

If WaterNSW intends to propose any risk mitigation measures at the next price review, we would expect it to clearly demonstrate how it would retain incentives to undertake long-term planning to mitigate risks and seek out ways to minimise their impacts on customers.

2.5 We retained the current efficiency carryover mechanism

Our decision is:

4. To maintain the efficiency carryover mechanism for operating expenditure for the 2022 determination period.

In 2019, we introduced an efficiency carryover mechanism for operating expenditure, which allows a utility to retain permanent efficiency savings for a fixed period regardless of when in the determination period they are achieved. This mechanism aims to remove the incentive for a utility to delay efficiency savings from the end of one determination period to the beginning of the next.

WaterNSW did not propose to activate the efficiency carryover mechanism for the 2019 determination period. It also did not propose changes to the efficiency carryover mechanism for the 2022 determination period.[11] We have accepted WaterNSW's proposal and have maintained the efficiency carryover mechanism for operating expenditure for the 2022 determination period.

2.6 We assessed expenditure using a 3-step process

We used a 3-step process to set WaterNSW's efficient expenditure. The sections below provide an overview of our approach. Chapters 3 and 4 outline our detailed assessment of WaterNSW's expenditure.

Step 1 – Reviewing proposed activities and costs:

This step considers whether any proposed changes to a utility's specific activities or new projects it is proposing to do are efficient. It does not apply to the utility's base (or 'business as usual') expenditure. If the utility's activities and projects (and associated costs) are not efficient, a **scope adjustment** is made.

Step 2 – Reviewing business processes relative to a benchmark efficient business

This step identifies the effectiveness of the utility's business processes (e.g. decision making and procurement processes) relative to a benchmark efficient business. Where we identify opportunities for improvements to the utility's business processes, we apply a **catch-up efficiency adjustment.** It takes into account the efficiencies we consider the utility could achieve by 'catching up' to its efficient peers.

Step 3 – Reviewing available data to capture possible future efficiencies

We apply a **continuing efficiency adjustment** to take account of the ongoing improvements that even the most efficient utilities should be able to make over time, as more productive ways of working emerge. We refer to long-term multi-factor productivity trends to set this adjustment. This recognises that in competitive markets (which we are trying to replicate through our regulatory framework) firms must innovate to achieve continuing efficiency gains over time.

Chapter 3

Operating expenditure

03

Summary of our decisions for operating expenditure

We accepted most of WaterNSW's proposed operating expenditure for the next 4 years and set the allowance at $5 million per year

After considering WaterNSW's proposal for the Pipeline, stakeholder submissions to our Issues Paper and Draft Report, and our consultants' expenditure review, our decision is to accept most of WaterNSW's proposed operating expenditure. We have set operating expenditure at around $5 million per year, which is 17% higher than WaterNSW's proposed operating expenditure. The main driver for the higher than proposed expenditure allowance is the significant increases in energy prices since WaterNSW submitted its pricing proposal in June 2021.

Our final decision on non-energy operating expenditure is to set the allowance at around $2.9 million per year for the 2022 determination period. This is similar to what WaterNSW originally proposed, but accounts for reallocation of costs and the application of a continuing efficiency factor.

We accept in principle an energy cost true-up mechanism as proposed by WaterNSW

Given the uncertainty on energy prices, we see merit in introducing an energy cost end-of-period true-up for the Pipeline. Under such a mechanism, actual energy prices over the 2022 determination period would be monitored, and at the next price review, customers would be compensated if energy prices were lower than forecast, while WaterNSW would be compensated if energy prices were higher than forecast.

While we agree in principle with an energy cost true-up mechanism in the specific circumstances of the Pipeline, we are not satisfied that WaterNSW's proposed energy cost adjustment mechanism appropriately allocates risk between WaterNSW and its customers. Instead, we invite WaterNSW to work with us prior to its next pricing proposal to develop a suitable energy cost true-up mechanism, with the intent that this mechanism would apply to energy costs over the 2022 Determination period.

WaterNSW incurs 2 types of costs for the Pipeline:

- operating expenditure, which are day-to-day expenses involved in running and maintaining the infrastructure and equipment to provide water transportation services (e.g. staff wages, electricity, contractors)
- capital expenditure, which are the investments it makes to buy, build and renew the infrastructure and equipment it uses to provide services (e.g. pipelines, buildings).

We assessed how much of each type of cost the Pipeline would need to incur to provide services that meet customers' expectations if the Pipeline is managed sustainably with minimum wasted effort and expense. Our decisions on these costs, which we call the efficient costs, determine how much expenditure WaterNSW will be able to recover through prices for Pipeline services over the 2022 determination period. We aim to set the efficient costs so they are no more and no less than necessary, to ensure WaterNSW has an incentive to improve how it manages the Pipeline.

This chapter outlines our assessment of WaterNSW's proposed operating expenditure and Chapter 4 discusses capital expenditure. To assist us, we engaged AECOM and the CIE to help us assess the historical and proposed costs for the Pipeline. Our decisions represent the overall level of operating expenditure that we consider sufficient to efficiently operate and maintain the Pipeline over the 2022 determination period. They are based on the best available data at the time of the review. The consultants' reports can be found on our website.

WaterNSW proposed operating expenditure of $17.8 million for the Pipeline over the 2022 determination period, averaging around $4.5 million per year. This is higher than the average annual expenditure of $3.7 million included in prices set for the 2019 determination period.

Our draft decision was to set the operating expenditure allowance to around $16 million over the next 4 years, or around 10% lower than proposed by WaterNSW. In its response to our Draft Report, WaterNSW did not agree with our draft decision to reduce energy costs. WaterNSW requested IPART reconsider its original proposal, and consider using an electricity price forecast based on latest available information when making final decisions. WaterNSW also did not support our draft decisions to reduce regulatory submission costs and set a continuing efficiency target over the next 4 years.[12]

Our final decision is to set WaterNSW's efficient total operating expenditure at $20.9 million (see Table 3.1). This is 28% higher than our draft decision, and 17% higher than WaterNSW's original proposal. We have updated some of our assumptions on energy costs based on WaterNSW's submission and our consultants' recommendations. This includes an electricity price forecast based on market data as of September 2022. This has resulted in higher energy costs compared with our Draft Report findings and WaterNSW's original proposal. We have also increased regulatory submission costs marginally to address an error in our draft decision identified by WaterNSW. We have maintained our decision to apply a continuing efficiency target over the 2022 determination period. The following sections provide further detail on our decisions.

Our decision is:

5. To set the WaterNSW Pipeline's total operating expenditure allowance for the 2022 determination period at $20.9 million, as shown in Table 3.1.

Table 3.1 Decision on efficient operating expenditure ($'000, $2021-22)

	Average 2019	2022-23	2023–24	2024–25	2025–26	Total 2022[a]	Average 2022[b]
WaterNSW proposal	5,074[c]	4,353	4,743	4,249	4,476	17,820	4,455
IPART decision	3,737[d]	5,656	5,485	4,841	4,901	20,883	5,221
Difference (total)	-1,337	1,303	742	592	425	3,063	766
Difference (total, %)	*-26%*	*30%*	*16%*	*14%*	*10%*	*17%*	*17%*

a. This refers to the sum of operating expenditure for the 2022 determination period.
b. This refers to the average per year of operating expenditure for the 2022 determination period.
c. This figure represents the average actual operating expenditure for 2019-20 and 2020-21 and estimates for 2021-22 reported by WaterNSW for the Pipeline in its pricing submission, excluding Wentworth Ski Park Reserve Rehabilitation costs and including regulatory preparation submission costs
d. This figure represents the average of allowed operating expenditure per year set for the 2019 determination period.

Note: Totals may not sum due to rounding

Source: IPART analysis and WaterNSW, Pricing Proposal to IPART, June 2021, p 34..

3.1 WaterNSW spent more than expected over the last 3 years

In 2019, we set the operating expenditure allowance for the Pipeline using the best available information at the time before the Pipeline was operational.

Over the 2019 determination period, WaterNSW reported $15.1 million of total actual operating expenditure for the Pipeline costs.[13] This is $4.1 million (27%) higher than the allowance we used to set prices in 2019.

This increase was mainly driven by higher than expected corporate overheads and energy costs. Corporate overhead costs were higher because WaterNSW applied a different cost allocation methodology from what was used in the 2019 review.[14] Energy costs were higher because WaterNSW had to transport more water to meet higher than forecast demand from Essential Water.[15]

3.2 WaterNSW's proposed increases reflect the Pipeline's operating environment

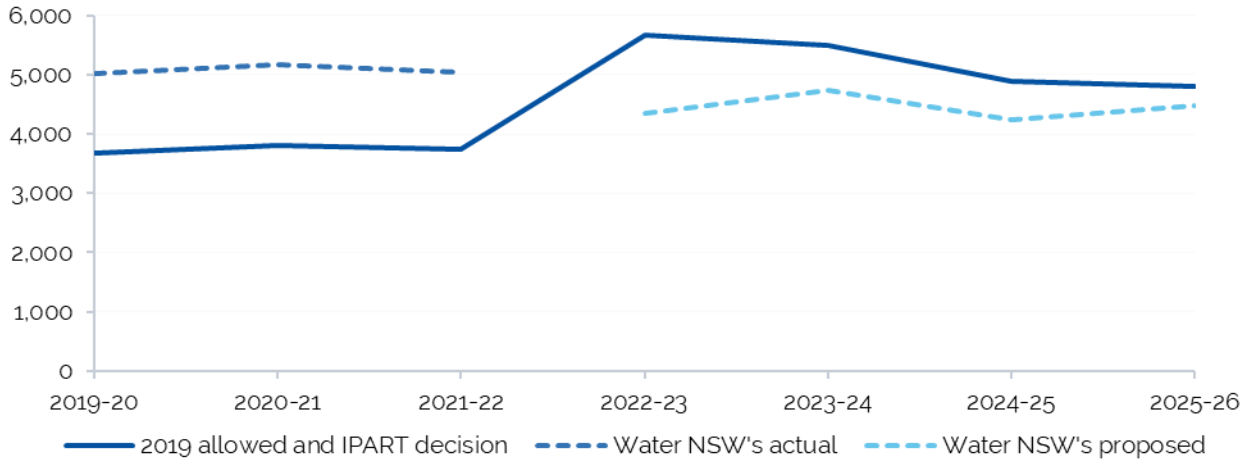
In its June 2021 pricing proposal, WaterNSW proposed operating expenditure of around $4.5 million per year (or $17.8 million in total) for the Pipeline over the 2022 determination period.[16] This is:

- $0.7 million (19%) per year *higher* than the average expenditure used to set prices in 2019
- $0.6 million (12%) per year *lower* than the average of WaterNSW's reported actual expenditure for the Pipeline per year over the 2019 determination period.[a]

[a] These figures differ from the Draft Report. These figures reflect updated inflation escalation factors to adjust $2019 to $2021-22.

Some of WaterNSW's proposed expenditure was based on costs it currently incurs such as the operating and maintenance (O&M) contract costs. Proposed energy costs were based on the approach used in the 2019 review, but reflected additional operating constraints experienced during the 2019 determination period. Other costs such as corporate overheads were based on the application of WaterNSW's existing cost allocation methodology.

Figure 3.1 Operating expenditure allowance compared with the Pipeline's actual and proposed operating expenditure ($'000, $2021-22)



Source: IPART analysis.

3.3 We set operating expenditure 17% higher than proposed

We have largely accepted WaterNSW's proposal on operating expenditure having considered both AECOM's and the CIE's recommendations and WaterNSW's response to the draft decision.

Over the 2022 determination period, our decision is to set WaterNSW's operating expenditure for the Pipeline $3 million higher than originally proposed by WaterNSW for the 2022 determination period, to around $5 million per year. This amount is:

- $0.7 million (17%) higher per year than proposed by WaterNSW in June 2021
- $1.5 million (40%) higher per year than the allowance we used to set prices in 2019
- $0.5 million (10%) higher per year than recommended by AECOM.[17]

Table 3.2 summarises our adjustments to WaterNSW's total proposed operating expenditure, which are based on:

- Allocating corporate overheads consistently across WaterNSW's business activities.
- A reduction in proposed total cost for the preparation of the next regulatory submission, but with the full amount allocated to operating expenditure rather than a portion being allocated to capital expenditure.
- An increase in energy costs, mainly due to higher forecast electricity prices using market data as of September 2022. This is partially offset by adjustments to some of the energy demand parameters reflecting actual energy usage over 2019-20 and 2020-21.

- Re-classifying asset replacement costs for offtake customers as capital expenditure rather than operating expenditure.
- Application of a continuing efficiency factor over the 2022 determination period.

These adjustments are discussed in detail in the sections below.

Table 3.2 Decision on efficient operating expenditure ($'000, $2021-22)

Expenditure items	2022-23	2023-24	2024-25	2025-26	Total
WaterNSW proposal[a]					
Total	4,353	4,743	4,249	4,476	17,820
IPART decision – adjustments to WaterNSW's original proposal					
Energy	+1,283	+743	+442	+446	+2,913
Corporate overheads	+41	+45	+79	+48	+213
Regulatory submission costs[b]	0	0	+134	+21	+155
Asset replacement costs for offtakes	-1	-0	-2	-6	-10
Continuing efficiency	-20	-45	-61	-83	-209
Total operating expenditure allowance	**5,656**	**5,485**	**4,841**	**4,901**	**20,883**
Difference from proposal ($)	+1,303	+742	+592	+425	+3,063
Difference from proposal (%)	*30%*	*16%*	*14%*	*10%*	*17%*

a. These amounts were based on WaterNSW's proposed operating expenditure allowance in its June 2021 proposal. These do not include any adjustments for the regulatory submission costs to take into account the 4-year determination period and the recommendation by AECOM to treat all proposed regulatory submission costs as operating expense.
b. These adjustments consider the shift in costs to take into account the 4-year determination period and the recommendation by AECOM to treat all proposed regulatory submission costs as operating expense.

Source: IPART analysis.

3.3.1 We set corporate overheads consistently across WaterNSW's business activities

In 2019, we set the corporate overheads for the Pipeline which assumed it was a standalone business. For the 2022 Determination, WaterNSW proposed that corporate overheads be set based on the Pipeline being part of WaterNSW's consolidated business. Further, WaterNSW proposed the allocation of corporate overheads to the Pipeline be based on a total expenditure approach.

AECOM agreed with WaterNSW that it is reasonable to set corporate overheads for the Pipeline assuming it is part of WaterNSW's consolidated business.[18] However, AECOM recommended the allocation of corporate costs should be based on a direct cost approach rather than the proposed total expenditure approach. Further, AECOM recommended to exclude energy cost from the allocation because it is not a driver of corporate cost.[19] These recommendations are in line with the decision we made for the WaterNSW rural bulk water price review in 2021.[20]

AECOM also recommended to further reduce overheads allocated to the Pipeline by excluding the Pipeline's operating and maintenance (O&M) contract. AECOM considered this contract was not a driver of overhead costs. WaterNSW disagreed with this additional adjustment because it noted that its total corporate costs, the allocation approach and the level of cost allocated to the different WaterNSW businesses were extensively reviewed in 2021. It was concerned that this would set a precedent of changing the cost allocation approach and amount of cost allocation at each price review for WaterNSW.

While we consider AECOM's findings have merits, we are conscious of potential financial impact on WaterNSW on a consolidated basis should we make further adjustments on corporate costs allocated to the Pipeline only.

On balance, our decision is to set the Pipeline's efficient corporate overheads based on the approach and at a similar cost level outlined in the WaterNSW rural bulk water price review. This means using direct cost allocation and allocating a similar cost level for corporate overheads to the Pipeline. As such, we are not accepting AECOM's recommended additional adjustment at this stage. Instead, we will consider AECOM's finding at the next opportunity we have to holistically review WaterNSW's corporate overheads, allocation approach and allocation amounts to the different WaterNSW businesses. We also expect WaterNSW to also consider this matter and engage us in the lead up to the next price review.

The decision on how corporate costs are allocated remains unchanged from the draft decision. In its draft decision response, WaterNSW agreed with our approach to set the Pipeline's efficient corporate overheads using the same methodology as that used in the WaterNSW rural bulk water price review.[21] However, due to changes in other operating costs items, corporate costs have changed slightly from our draft decision, and is now marginally higher.

3.3.2 We found opportunities to reduce the proposed regulatory costs

WaterNSW proposed a *total* regulatory submission cost of $0.5 million over the 2022 determination period, with around $0.3 million (49%) allocated to operating expenditure and the remaining $0.3 million (51%) to capital expenditure.[b]

AECOM assessed the proposed costs and raised several concerns:[22]

- It is standard practice to expense the cost of preparing a regulatory submission. Therefore, it recommended treating all proposed costs as operating expenditure.
- The proposed costs were considerably higher than the cost allowance we set in 2019. It recommended costs to revert to similar levels allowed in the 2019 Determination. AECOM found opportunities to reduce costs through a more efficient submission process. For example, most inputs for regulatory submissions can be obtained from its O&M contractor. Further, WaterNSW has a regulatory team and it can leverage their capability when preparing the Pipeline's regulatory submission.

[b] WaterNSW proposed regulatory submission costs to occur in 2025-26 and 2026-27 (penultimate and final year) of its proposed 5-year determination period. Because we decided to set the determination period at 4 years, we shifted these costs to occur in 2024-25 and 2025-26 when determining our decisions on costs.

- Partly offsetting these cost reductions, AECOM found the proposed consultancy costs for the review of energy costs are necessary because this requires specialist advice. During the expenditure review, WaterNSW indicated that it engages an energy consultant to help in forecasting future energy costs. The associated costs were not included in its proposal. AECOM assessed this new information and it agreed with WaterNSW on providing an additional allowance for the energy cost review.

Overall, AECOM recommended to set the efficient regulatory submission costs at around $0.3 million over the 2022 determination period. In our Draft Report, we decided to accept AECOM's recommendations and set efficient regulatory submission costs at $0.3 million.

In its submission to our Draft Report, WaterNSW disagreed with our draft decision and reiterated its original proposal of $0.5 million cost. It asserted that our draft decision was inadequate to cover its future costs.[23] WaterNSW also highlighted a potential error in our Draft Report. It found that the cost attributed for 2026-27, which currently is outside the 4-year determination period, was omitted from the draft allowance and requested to include this when making final decision.[24]

Our final decision is to set regulatory submission costs at $0.3 million. We agree with WaterNSW to fix the error it identified and have incorporated that in our decision. Apart from the error, we decided to largely maintain our draft decisions because no new information was provided by WaterNSW in its response.

3.3.3 Benchmark energy costs are higher due to increasing energy prices

The Pipeline incurs energy costs due to the energy needs of the 4 pump stations that are used to transport water from the Murray River to Broken Hill.

WaterNSW proposed to set the benchmark energy cost allowance for the 2022 determination period using broadly the same approach that was used for the 2019 determination period. In 2019, we set the benchmark energy costs through the following 3 high-level steps:

Applying this general approach and using its proposed assumptions, WaterNSW proposed a benchmark energy allowance over the 2022 determination period of around $1.5 million per year.[25] This represents around 35% of the total proposed operating expenditure for the 2022 determination period.

Our final decision is to largely accept WaterNSW's proposal to use the same approach as for the 2019 Determination. Using a benchmark approach rather than WaterNSW's actual energy costs avoids a situation where energy costs are simply passed through to customers, which would result in no incentive for WaterNSW to effectively manage energy use and seek least cost energy supply contracts. Instead, a benchmark approach creates an incentive for WaterNSW to find efficiencies in how it uses and procures energy.

While we have decided to retain the general approach used in 2019 and proposed by WaterNSW for the 2022 determination period, we have replaced some key assumptions to reflect data on the Pipeline's actual energy use over 2019-20 and 2020-21. In addition, we have updated forecast energy prices to reflect market data as of September 2022. The following sections summarises our decisions for each step of the benchmark approach to determining energy costs for the Pipeline over the 2022 determination period.

WaterNSW also proposed to introduce an energy cost true-up mechanism to share with customers the risk of energy prices being materially different from those forecast and reflected in our decisions. Under this mechanism, actual energy prices over the 2022 determination period would be monitored, and at the next price review, customers would be compensated if energy prices were lower than forecast, while WaterNSW would be compensated if energy prices were higher than forecast.

While we agree in principle with an energy cost true-up mechanism in the specific circumstances of the Pipeline, we are not satisfied that WaterNSW's proposed energy cost adjustment mechanism appropriately allocates risk between WaterNSW and its customers. Instead, we invite WaterNSW to work with us prior to its next pricing proposal to develop a suitable energy cost true-up mechanism, with the intent that this mechanism would apply to energy costs over the 2022 Determination period. Section 3.4 and the CIE's reports[26] discusses WaterNSW's proposed true-up mechanism in further detail.

For step 1, the Pipeline's benchmark energy use parameters were updated to reflect data on actual energy use in 2019-20 and 2020-21

The Pipeline uses energy to transport water from the Murray River to the Broken Hill community. The Pipeline's energy demand profile is driven by 2 factors:

1. The energy volume required to operate the Pipeline and transport water
2. The pumping profile or timing of when water is pumped that result in value for money while ensuring reliability of water supply.

The following section outlines:

- how we estimated benchmark energy volumes
- how we set the benchmark pumping profile
- the level of energy demand by the Pipeline.

The share of fixed and variable energy use reflects WaterNSW's actual energy use data

Energy volume has 2 components:

- Fixed energy volume is the base amount of energy required each day, regardless of how much water is transported by the Pipeline. This is expressed as megawatt hours (MWh) per day.
- Variable energy volume is the amount of energy required to transport each ML of water. This is expressed as MWh per ML.

Our final decision maintains our draft decision to adopt a significantly lower fixed energy parameter (0.6MWh/day) than proposed by WaterNSW (6.39MWh/day).[27] WaterNSW had originally proposed to maintain the fixed and variable energy parameters applied in the 2019 Determination, which were based on an engineering assessment of the pipeline design concept.[28]

In its original assessment, our energy expenditure consultant, the CIE, accepted WaterNSW's proposed fixed and variable parameters, but noted the modelled energy parameters were based on a design concept and had not been verified against actual performance. The CIE also noted that the proposed parameters were not supported by monthly data on actual energy use, and recommended WaterNSW provide substantiating evidence, including but not limited to an engineering assessment.[29]

IPART's draft decision was based on regression analysis of daily data on actual energy use, which showed a significantly lower fixed portion that proposed by WaterNSW.[30] We asked WaterNSW to comment on our analysis and it contended the benchmark parameters set in the 2019 were robust and appropriate to use. However, it could not properly explain the significant difference between actual energy use and energy use suggested by the original assumptions on fixed and variable parameters. In its response to our draft decision, WaterNSW maintained its position that fixed and variable energy parameters should be based on the engineering assessment from 2019, however did not provide any further information to support the accuracy of these parameters.[31]

Subsequent analysis by the CIE considered the same daily data that underpinned IPART's draft decision, and the CIE concluded this data strongly indicates fixed energy use is lower than WaterNSW's proposed value. The CIE did however suggest the possibility that the daily data provided was incomplete. We understand from WaterNSW that it would require further analysis to determine the appropriate fixed energy parameter. Without further information, the CIE recommended that IPART maintain the fixed and variable energy parameters adopted in the draft decision.[32] We have accepted this recommendation from the CIE, and our final decision reflects the same parameters as in our draft decision.

The pumping profile is optimised to achieve lowest energy costs while accounting for actual operating constraints

Our final decision on benchmark energy volumes for the Pipeline maintains the use of a stylised model to identify the optimal pumping profile that achieves the lowest energy costs. The model prioritises pumping during off-peak energy periods, followed by shoulder and peak periods, subject to a number of operational constraints.

The model was originally developed in support of our 2019 decision, when the pipeline was not yet operational. In its 2021 pricing proposal, WaterNSW proposed to use the Pipeline's actual pumping profile in 2019-20 to determine energy costs. WaterNSW contended this would factor in the Pipeline's actual operational constraints, which it argued was not appropriately reflected in the stylised model.[33]

The CIE considered both WaterNSW's proposal and the modelling work done in the 2019 review in its assessment. The CIE concluded that using the model, updated to reflect new information on operational constraints, would be preferred to using actual data for several reasons:[34]

- The pumping profile depends on the level of demand. As demand is expected to fall over the determination period, the CIE would expect the pumping profile to change – using actual data does not allow the profile to change with demand. In Chapter 6, we discuss our findings and decisions on demand for transporting water using the Pipeline.
- The CIE could not easily assess whether 2019-20 actual data reflects efficient pumping. Limited information is available around how pumping is determined. WaterNSW provided additional data on actual pumping for 2020-21 and comparison of the two pumping profiles showed material differences. The IPART model has allowed the CIE to determine a simplified stylised efficient pumping profile and lay out relevant assumptions. The CIE notes that over time these assumptions may be improved to more accurately reflect pipeline constraints.
- The simulated pumping profile accounts for a wide range of factors which are likely to affect pumping, such as water losses, pipeline downtime, and minimum storage levels in bulk water storage facilities.

CIE also recognises that the pumping profile will have smaller impact on energy costs compared to other assumptions, such as demand, fixed and variable energy parameters and energy price forecasts.[35]

In response to our draft decision, WaterNSW re-iterated its concerns around using IPART's stylised pumping model, however accepted the use of a benchmark profile rather than using actuals.[36]

In reviewing the concerns raised by WaterNSW around the use of IPART's pumping model, the CIE found that most of the factors which affect pumping can be accommodated in a stylised model. It considers that when these factors can be quantified, they should be included in the model. However, no additional quantitative information was provided by WaterNSW to allow adjusting the assumptions CIE used in its original review. For this reason, the CIE recommends that the model is further refined in consultations with WaterNSW prior to the next Pipeline review.[37]

Based on consultations with WaterNSW, the CIE considers there are two key areas where the model can be improved to better reflect actual constraints:[38]

1 allowing different pipeline availability during off-peak periods compared to peak and shoulder periods. For example, if equipment fails during an off-peak period it may take longer to fix outside of business hours resulting in lower pipeline availability. WaterNSW have not provided an estimate of pipeline availability during the off-peak.

2 assessing how actual pumping plans take into account storage levels. The IPART model allows storages to vary across the year; if the actual pumping plan is conditioned on storage levels, the CIE would expect actual pumping to be similar to the smoothed profile generated by the IPART model.

In making its recommendations on maximum demand, the CIE used an energy analysis model provided by WaterNSW (developed by Frontier Economics). The CIE adjusted the model to align with IPART's decisions on demand and the pumping profile from IPART's pumping model. The CIE made two further adjustments:[39]

- The number of hours in each period is adjusted to allow 9 off-peak hours, 10 shoulder hours and 5 peak hours on weekdays, which is consistent with the WaterNSW pricing proposal. The model previously allowed 9 off-peak hours, 12 shoulder hours and 3 peak hours per day.
- Total pumping volume per hour was capped to be consistent with pipeline capabilities (i.e. 27 ML/day and 98 per cent availability). This adjustment was made to resolve an error identified by WaterNSW.

The CIE's recommended pumping profile under the assumption of 98% off-peak availability is set out in the table below, compared against the 2019-20 actual pumping profile.[40]

Table 3.3 Pumping profile by electricity Time of Use period

Period	Actuals 2019-20	IPART model – 98% off-peak availability
Peak	0.09%	0.95%
Shoulder	24.50%	18.23%
Off-peak	75.41%	80.82%
Total	**100%**	**100%**

Source: The CIE, *Review of WaterNSW's response to the Broken Hill Pipeline Draft Decision on Energy*, October 2022, p 22.

The CIE's resulting recommended maximum energy demand is shown in the table below, compared against WaterNSW's submission. This also reflects the CIE's recommendation on the fixed vs variable energy parameters discussed above.[41]

Table 3.4 Maximum demand 2022/23

Period	WaterNSW Submission (MW)	CIE recommended (MW)
Off-peak	2.09	1.83
Shoulder	1.73	1.66
Peak	0.30	0.03

Source: The CIE, *Review of WaterNSW's response to the Broken Hill Pipeline Draft Decision on Energy*, October 2022, p 23.

Final decision on benchmark energy demand profile for the Pipeline

We agree with the CIE's recommendation on the benchmark pumping profile. We also agree with the CIE's recommendation to work with WaterNSW prior to the next pipeline review to further refine the IPART pumping model.

Table 3.5 shows the estimated benchmark energy demand in off-peak, shoulder and peak periods in each year of the 2022 determination period. Our decision on energy demand differs from WaterNSW's proposal because we used different benchmark energy volume parameters, pumping profile and the volume of water transported by the Pipeline, which affects the pumping profile (see Chapter 6 for more on water demand volumes).

Table 3.5 Decision on the Pipeline's benchmark energy demand (MWh)

	2019 decision annual average[a]	2022-23	2023-24	2024-25	2025-26	Total 2022[b]
IPART 2019 decision and 2022 decision						
Off-peak	12,784[c]	8,637	8,661	8,635	8,627	34,561
Shoulder	2,751[c]	1,277	1,217	1,221	1,188	4,904
Peak	571[c]	39	38	36	35	148

a. This column represents the average energy demand per year for the 2019 determination period.
b. This refers to the sum of energy demand for the 2022 determination period.
c. This represents the average energy demand per year as set out in the 2019 Determination.

Source: IPART analysis.

For step 2, we based the forecast energy prices on updated data

Our final decision on forecast energy prices retains the same approach as the draft decision, updated for more recent market data.

For its pricing proposal, WaterNSW engaged Frontier Economics to forecast energy prices for the 2022 determination period. Frontier Economics used a cost build-up approach to consider the different components of energy prices. This is the same approach used in the 2019 review when determining the energy cost.

Our energy consultants, the CIE, found in its original review that WaterNSW's approach to estimating forward energy prices was sound. However, the CIE adjusted some of the energy price components to consider latest market data.[42] We accepted the CIE's recommendations in our draft decision.

In its draft decision response, WaterNSW has maintained its original approach to estimating forward energy prices (as provided by Frontier Economics), but with updated data up to 30 June 2022. Reviewing WaterNSW's draft decision response, the CIE supports WaterNSW position that using the latest available data is in principle best practice. WaterNSW submitted a further update to energy prices using data up to 28 September 2022. The CIE's recommendation is to use this data, recognising the rapidly changing circumstances under which IPART is now making its determination. The CIE notes that since November 2021, forecast electricity prices for WaterNSW has increased by almost a factor of 4 for 2022-23. Prices are expected to fall in forward years, but are expected to remain around 2 times higher than forecasts as of November 2021.[43]

In its supplementary report, the CIE pointed to IPART's intention to use market observations sampled to the end of March 2022 in determining the Final WACC. IPART's reason for the chosen sampling period was our view that the 6-month delay in our final decisions should not result in a windfall gain or loss to the affected utilities or its customers.

The CIE noted that IPART may want to consider consistency of the approach to sampling market information within the review. The CIE notes that not using the most recent data in this case reallocates risk from customers to WaterNSW, given latest forecasts are higher than March 22 forecasts.[44]

We agree in principle with the positions taken by both WaterNSW and the CIE that using the latest available information is best practice. We also note that the WACC is subject to an established end of period cost of debt true-up mechanism, which serves to mitigate in NPV terms a portion of retaining a March 2022 WACC estimate for the final decision.

As explained in section 3.4 we have accepted in principle WaterNSW's proposal for an energy true-up mechanism. Similarly to the existing true-up mechanism for the cost of debt, the energy true-up mechanism would serve to mitigate risk to WaterNSW as a result of the chosen timing for the electricity price forecasts. However, given the materiality of both the recent energy price increase and energy costs as a portion of WaterNSW's total cost, we consider it imprudent to not allow for these increases now.

Our final decision is therefore to accept the CIE's recommendations and use energy prices based on sampling of data up to 28 September 2022.

For step 3, we set total benchmark energy costs at around $9.1 million over the next 4 years

Table 3.6 shows our final decision on benchmark energy costs for the 2022 Determination period. The final decision is higher than WaterNSW's original proposal. This is mostly driven by our decision to change the Pipeline's benchmark energy volumes, which affects the overall energy demand profile and energy costs.

Table 3.6 Decision on benchmark energy costs ($'000, $2021-22)

Energy cost	2022-23	2023-24	2024-25	2025-26	Total
WaterNSW original proposal	1,563	1,551	1,544	1,537	6,194
The CIE final recommendation	2,846	2,294	1,986	1,983	9,108
IPART final decision	2,846	2,293	1,986	1,983	9,107
Difference from proposal (total)	1,283	743	442	446	2,913
Difference from proposal (total, %)	82%	48%	29%	29%	47%

Source: IPART analysis

3.3.4 We have re-classified asset replacement costs for offtake customers

Asset replacement expenditure over the 2022 determination period includes a number of minor asset replacement works. This is based on the asset renewal schedule specified under the O&M contract. WaterNSW proposed to treat all asset replacement expenditure as operating costs because the expenditure is below its (accounting) capitalisation threshold.[45]

For services to Essential Water, we accepted WaterNSW's proposal to treat asset replacement costs as operating expenditure rather than capital expenditure, because the impact on Essential Water's annual bill is very small (less than 0.2%). This is because the bulk of the expenditure occurs in the first 2 years of the determination period and the assets created have an average asset life of around 5 years. This means that, if we treated asset replacement costs as capital expenditure, WaterNSW would recover most of the expenditure over the 2022 determination period. In addition, the amount of expenditure is small (2.5% of non-electricity operating costs).

We did not accept WaterNSW's proposal for services to offtake customers because the impact on offtake bills is material. Treating asset replacement costs as operating expenditure rather than capital expenditure would add around $450 (before inflation) to the annual access charge that an offtake customer pays in 2022-23 (or around 7% increase). This happens because almost 90% of the expenditure occurs in the last 2 years of the 2022 determination period, with almost 65% occurring in the last year alone. Treating asset replacement as capital expenditure means that WaterNSW will recover the costs of the expenditure over the life of the assets (4 years) rather than upfront.

Our final decision on re-classification of asset replacement cost remains unchanged from the draft decision. WaterNSW did not comment on this decision in its draft decision response.

3.3.5 We consider WaterNSW could make ongoing efficiency savings

When setting prices for water utilities, we generally apply a continuing efficiency adjustment to all operating expenditure and capital expenditure. This adjustment is important because it ensures our maximum prices capture the impact of ongoing management initiatives and new technologies that enable firms to do more with less input. We favour a forward-looking adjustment because it:

- incentivises the regulated firms to pursue productivity enhancing activities over the determination period
- recognises market-based firms' continuous push to innovate and become more productive over time
- is consistent with the incentive-based framework under which we set prices for public water utilities.

By putting a quantitative target in place, we establish an expectation of continuous productivity improvement that efficient businesses should reasonably be able to achieve over the determination period.

Our decision is to apply a continuing efficiency adjustment of 0.7% per year, totalling $209,000 in efficiency savings over the 2022 determination period (see Table 3.7). This adjustment is based on our current methodology which reflects the long-run shift in the efficient frontier. This includes:

- Using the market sector-based estimate of the Australian multi-factor productivity (MFP) growth data to calculate the continuing efficiency adjustment. We continue to prefer using market sector data rather than data specific to the utilities or a subset of industries. This approach represents the efficiencies that could be available to utilities, through internal initiatives or incorporated through supply chains.
- Using the long-run average of the entire time series data rather than a shorter time period (or favouring more recent data). A longer time series provides more data points and helps to reduce the impacts on final estimates of unusual MFP growth over a single business cycle. Further, this approach does not require judgement about what part of the business cycle we will experience over the determination period.

Table 3.7 Decision on continuing efficiency factors

Efficiency adjustment	2022-23	2023-24	2024-25	2025-26	Total
Continuing efficiency (cumulative %)	-0.7%	-1.4%	-2.1%	-2.8%	N/A
Continuing efficiency ($ '000, $2021-22)	-20	-45	-61	-83	-209

Source: IPART analysis.

This decision is unchanged from the decision in our Draft Report. In response to our Draft Report, WaterNSW submitted that including a continuing efficiency factor for the Pipeline is unreasonable.[46] It was concerned about potential double counting when other efficiency adjustments are made. It was also concerned that it would be difficult to achieve efficiency savings under the current challenging market conditions.

In addition, WaterNSW considered the adjustment factor should give most weight to the measured productivity of the industry (rather than the market sector) because this more closely aligns with water businesses. WaterNSW also considered the adjustment factor should give most weight to MFP estimates over the most recent historical years (rather than 40 years).

We consider that our approach in differentiating scope, catch-up and continuing efficiency adjustments help eliminate potential double-counting. We also consider that having an adjustment factor incentivises WaterNSW to ensure it negotiates a good outcome for its customers and continue to pursue productivity-enhancing initiatives.

We also consider it is appropriate to base the continuing efficiency factor on the market sector data rather than data specific to the utilities sector or a subset of industries. This approach represents the efficiencies that could be available to utilities, through internal initiatives or incorporated through supply chains.

Lastly, we consider that our current approach, which uses all available data, is preferable to a shorter time period. A longer time series provides more data points and helps to reduce the impacts on final estimates of unusual MFP growth over a single business cycle. Further, this approach does not require judgement about what part of the business cycle we will experience over the forthcoming regulatory period.

3.4 There is merit to an end-of-period true-up for the benchmark energy cost allowance

To manage significant uncertainty around energy prices, WaterNSW proposed in its original pricing submission that the benchmark energy allowance be subject to an end of period true-up of the wholesale and network cost components. In our draft decision, we found that there was merit in such a mechanism, and noted that our cost pass-through principles supported the proposed mechanism (see Box 3.1). However, our draft report noted that our decision could not bind a future Tribunal. Our draft decision was therefore to consider at the next determination of the Pipeline's prices:

- Whether an adjustment to the revenue requirement and prices is required to address any over or under-recovery of revenue over the 2022 determination period due to changes in energy costs as a result of changes in wholesale and network components of energy prices.

- Whether and how best to make a revenue adjustment based on the circumstances at the time.

In its draft submission response, WaterNSW highlighted there are several instances where IPART provides guidance to stakeholders to clarify how similar mechanisms operate and how IPART intends to apply them at the next price review. Examples include the cost of debt true-up, the demand volatility adjustment, the efficiency carryover mechanism, and the energy adjustment mechanisms for SDP.[47]

WaterNSW considers it would be better able to manage the risk associated with uncertain energy costs if greater clarity was provided as to IPART's intentions, and that this would be in the long-term interests of customers. For this reason, WaterNSW proposed a process intended to allow WaterNSW and IPART to transparently monitor movements in wholesale and network prices and to implement the true-up in subsequent regulatory periods.[48]

Box 3.1 Assessing the proposed true-up for energy costs

We applied cost-pass through principles in our assessment of WaterNSW's original proposed energy true-up by WaterNSW. We consider these principles support the proposal because:

- There is a trigger event. WaterNSW proposed to pass on changes in energy costs due to movements in wholesale and network energy prices to customers at the next price review.
- We can assess the impact on efficient cost at the next price review.
- The impact on efficient cost can be material.
- WaterNSW cannot influence the likelihood of the trigger event or the changes in efficient cost. This is because wholesale and network energy prices are determined either by the market or other independent regulators/authorities.
- The true-up is symmetric and applies equally to cost increases and decreases.
- The true-up would support more cost-reflective prices.

Source: IPART analysis

WaterNSW's revised true-up proposal includes additional cost items beyond wholesale energy costs and network charges in the original proposal. The proposed revised mechanism includes: [49]

- Wholesale electricity costs
- Network Charges
- Renewable energy schemes (including large scale generation certificates (LGCs), small scale technology certificates (STCs) and the costs for the NSW Energy Savings Scheme (ESS)

- Reliability and Emergency Reserve Trader (RERT) charges
- Compensation claims for directed generators under clause 3.15.7B of the NER (generator compensation charges), and
- Other costs/charges that may be introduced (e.g. capacity payments).

WaterNSW state the additional cost-true-up elements:

- are necessary due to the recent national electricity market (NEM) events[c]
- are beyond WaterNSW's control as they are determined by independent regulators, or AEMO and levied on market participants on the occurrence of uncertain and uncontrollable events, and
- meet IPART's cost pass through thresholds, including whether the costs have potentially high volatility.

In its supplementary report, the CIE supports IPART's draft decision agreeing in principle to an end of period true-up that reflects changes in the wholesale and network components of the adopted benchmark energy prices. The CIE considers the wholesale and network energy prices are material, potentially volatile in the current market environment and largely outside WaterNSW's control. The CIE also agrees with WaterNSW's draft decision response that a clear methodology could assist WaterNSW to clearly identify any risks that need to be managed.[50]

In relation to the additional cost items proposed by WaterNSW to be included in the true-up mechanism, the CIE considers that items such as the RERT and generation compensation charges are highly uncertain and cannot be forecasted upfront for inclusion as part of WaterNSW's revenue requirements. The CIE therefore is of the view that these other charges should not form part of the true-up adjustment.[51]

Finally, the CIE notes that, given the costs included in the recommended energy true-up are largely outside WaterNSW's control, these should be excluded from the Efficiency Carryover Mechanism.[52] See section 2.5 for more detail on the Efficiency Carryover Mechanism.

Final decision on energy true-up mechanism

We remain of the view that there is merit to an energy true-up mechanism. However, we are not satisfied that WaterNSW's proposed energy true-up mechanism appropriately allocates risk between WaterNSW and its customers. Specifically:

3. WaterNSW has not sufficiently demonstrated that the additional elements requested to be included in the true-up mechanism satisfy our cost pass-through criteria
4. WaterNSW has not provided sufficient justification for the proposed approaches for updating the various elements included in the true-up mechanism, including whether these reflect the prudent behaviour of a benchmark efficient entity, and the extent to which WaterNSW will be incentivised to efficiently manage its actual energy costs.

[c] The CIE interprets this to relate to: the Australian Energy Market Operator's (AEMO's) temporary 9-day suspension of the National Electricity Wholesale spot market and reliability interventions; electricity generation reliability gaps in the transition to renewable energy; and large increases to electricity generators input coal and natural gas prices.

We invite WaterNSW to provide further justification for its proposed energy true-up mechanism. We are open to working with WaterNSW prior to its next submission to develop a true-up mechanism that appropriately balances energy cost risk between WaterNSW and its customers, with the intent that this mechanism would apply to energy costs over the 2022 Determination period.

Our decision is:

6. If sought by WaterNSW, to work with WaterNSW prior to its next submission to develop a true-up mechanism that appropriately balances energy cost risk between WaterNSW and its customers, with the intent that this mechanism would apply to energy costs in the 2022 Determination period.

Chapter 4

Capital expenditure and performance indicators

04

Summary of our decisions for capital expenditure

To accept most of WaterNSW's past capital expenditure and set efficient capital expenditure at $4.1 million

We found that WaterNSW's capital expenditure over the 2019 determination period is mostly efficient and our decision is to accept it. WaterNSW spent more than the allowance set by IPART for the 2019 Determination due to higher land acquisition costs and the Wentworth Ski Park project. These costs appear to be justified and reasonable, however we would like to see improvements in WaterNSW's documentation of capital projects.

We have decreased capital expenditure over the 2019 determination period by around $0.3 million because we consider that regulatory submission costs should not be treated as capital expenditure.

To set the capital expenditure allowance at around $10,000 for the 2022 Determination

WaterNSW proposed minimal capital expenditure of around $0.3 million for the 2022 Determination, consisting of regulatory submission costs. Our decision is that regulatory submission costs should be treated as operating expenditure, and so we have excluded these costs from the capital expenditure allowance. We have reclassified asset replacement costs for offtake customers as capital expenditure and have therefore set the allowance at around $10,000 to reflect this.

That WaterNSW continue to report on the existing set of performance indicators for the Pipeline as part of its Annual Information Return

WaterNSW currently submits data every year to IPART on a set of performance indicators for the Pipeline to inform future reviews (including our expenditure and demand assessments). These performance indicators form part of an information package (the annual information return). Our decision is that WaterNSW continue to report on these performance indicators for the Pipeline.

Capital expenditure is needed to renew existing assets and establish new assets that service customers over the long term. Key drivers of capital expenditure are meeting customer service standards and compliance with regulatory obligations.

This chapter outlines our assessment of the WaterNSW's past and proposed capital expenditure for the Pipeline. It discusses:

- WaterNSW's actual capital expenditure during the 2019 determination period and compares this to the allowance we set in the previous review
- WaterNSW's proposed capital expenditure for the 2022 determination period
- our decisions on WaterNSW's past and proposed capital expenditure.

As with operating expenditure, we engaged AECOM to review the WaterNSW's past and proposed capital expenditure. AECOM's report, which includes detailed analysis of the Pipeline's capital expenditure, is available on our website. We also considered submissions from stakeholders in making our decisions.

Under the building block method, capital expenditure is added to the Regulatory Asset Base (RAB) and recovered over time through allowances for return on assets and regulatory depreciation.

4.1 We have accepted most of WaterNSW's past capital expenditure

WaterNSW spent around $4 million in capital expenditure over the last 3 years. This is higher than the allowance of around $0.5 million we set in our 2019 review, to acquire land to access the Pipeline for operations and maintenance.[53] These higher costs are mostly due to higher land acquisition costs[a] to ensure infrastructure is available to support Pipeline operations.[54] AECOM agreed that these costs are reasonable, but also noted that the quality of supporting documentation was poor.

WaterNSW also proposed capitalising the costs of the Wentworth Ski Park Reserve project ($1.6 million). WaterNSW rehabilitated the Greater Murray Darling Junction Reserve at Wentworth Ski Park as a 'make good' obligation to the residents of Wentworth.[55] AECOM found that the project was necessary and that the lowest priced option was chosen from a competitive tender process.

[a] WaterNSW attributes a large proportion of its capital cost to land acquisitions required to place infrastructure such as pump stations, bulk water storage and access to place pipe on private lands.

Although WaterNSW spent more than the allowance, we found that capital expenditure over the last 3 years was mostly efficient.

AECOM recommended that we decrease capital expenditure by around $0.3 million because it considers that regulatory submission costs should not be treated as capital expenditure. We agree with AECOM's findings and the recommended adjustment for regulatory submission costs. We have accepted AECOM's recommended capital expenditure allowance of around $4 million, shown in Table 4.1. Our final decision on past capital expenditure remains unchanged from the draft decision. WaterNSW did not comment on this decision in its draft decision response.

Table 4.1 AECOM's recommended adjustments to capital expenditure - 2019 determination ($'000, $2021-22)

	2019-20	2020-21	2021-22	Total
WaterNSW proposed capital expenditure	2,011	667	1,693	4,371
AECOM recommended adjustments (regulatory submission costs)	0	-192	-93	-285
AECOM recommended capital expenditure allowance	2,011	475	1,600	4,086
IPART decision on capital expenditure allowance	**2,011**	**475**	**1,600**	**4,086**

Source: IPART analysis.

Our decision is:

7. To set the Pipeline's efficient capital expenditure to be included in the Regulatory Asset Base (RAB) for the 2019 determination period as shown in Table 4.2.

Table 4.2 Decision on capital expenditure – 2019 Determination ($'000, $2021-22)

	2019-20	2020-21	2021-22	Total
Pipeline	656	5	0	661
Bulk water storage facility	38	0	0	38
Plant and machinery (including pump stations and river intake)	55	0	0	56
Buildings	11	0	0	12
Regulatory submission costs and other support costs	0	100	0	100
Cost of land swap agreement	0	0	296	296
Wentworth Ski Park rehabilitation	1,250	54	84	1,389
Non-depreciating assets (e.g. land)	0	314	1,220	1,534
Offtake customers (including land swap agreement offtake)	0	0	0	0
Total	**2,011**	**475**	**1,600**	**4,086**

Source: IPART analysis.

4.2 WaterNSW proposed minimal capital expenditure for the 2022 determination period

For the 2022 determination period, WaterNSW proposed a relatively small capital expenditure allowance (around $0.3 million) consisting of capitalised regulatory submission costs.[56] We have accepted AECOM's recommendation to treat regulatory submission costs as operating expenditure. As discussed in Chapter 3, we also did not accept WaterNSW's proposal to treat asset replacement costs as operating expenditure for offtake customers because the impact on their bills is material. Table 4.3 shows our adjustments to proposed capital expenditure which reflect these decisions. These decisions remain unchanged from the draft decision. WaterNSW did not comment on these decisions in its draft decision response.

Table 4.3 AECOM's recommended adjustments to capital expenditure - 2022 determination ($'000, $2021-22)

	2022-23	2023-24	2024-25	2025-26	Total
WaterNSW proposed capital expenditure	0	0	0	180	180
Asset replacement costs for offtake customers (excluding the land swap agreement offtake) [a]	1	0	3	7	10
AECOM recommended adjustments (regulatory submission costs)	0	0	0	-180	-180
AECOM recommended efficiency adjustments	0	0	0	0	0
IPART capital expenditure allowance	1	0	2	6	10

a: Asset replacement costs for land swap agreement offtake are included in the operating costs for services to Essential Water.
Source: IPART analysis.

Our decision is:

8. To set the Pipeline's efficient capital expenditure for the 2022 determination period as shown in Table 4.4.

Table 4.4 Decision on capital expenditure – 2022 determination ($'000, $2021-22)

	2022-23	2023-24	2024-25	2025-26	Total
Pipeline	0	0	0	0	0
Bulk water storage facility	0	0	0	0	0
Plant and machinery (including pump stations and river intake)	0	0	0	0	0
Buildings	0	0	0	0	0
Regulatory submission and other support costs	0	0	0	0	0
Cost of land swap agreement	0	0	0	0	0
Wentworth Ski park rehabilitation	0	0	0	0	0
Non-depreciating assets (e.g. land)	0	0	0	0	0
Offtake customers (excluding land swap agreement offtake)[a]	1	0	2	6	10
Total	**1**	**0**	**2**	**6**	**10**

a Asset replacement costs for land swap agreement offtake are included in the operating costs for services to Essential Water.
Source: IPART analysis.

4.3 WaterNSW's long-term planning processes for the Pipeline are sound but do not consider the impacts of climate change

AECOM reviewed WaterNSW's long-term asset management and planning processes for the Pipeline and found that they reflect good practice, but also that there is scope to consider climate change impacts.

WaterNSW requires its operations and maintenance contractor for the Pipeline (John Holland TRILITY Joint Venture (JV)) to maintain a comprehensive asset management plan for the Pipeline and associated assets.[57] The asset management plan for the Pipeline does not mention climate change planning and does not include a review of demand factors, or specific climate change risks to assets or service delivery.

The capacity of the Pipeline and associated bulk water storage is higher than what is currently required by customers, which may represent a consideration for future climatic conditions. However, an asset management plan that considers climate change would typically consider changes in demand, or risks, caused by changes in climate. For example, the risks and demand sections of the asset management plan could consider more frequent severe weather or climate events, such as drought or heavy rain.[58]

We expect WaterNSW to include climate change considerations in its long-term planning processes.

4.4 We will continue to collect the same performance indicators for the Pipeline over the next 4 years

We often set output measures and/or performance indicators for the water utilities we regulate to assess whether they are delivering on the expenditure plans or outcomes outlined in their pricing proposals. This is important because we set prices to enable them to recover the forecast costs of delivering services to customers. WaterNSW did not propose any output measures or performance indicators in its pricing submission to IPART for this review.

In 2019, we decided there was limited benefit in setting output measures that focus on capital projects or expenditure because the Pipeline was new and forecast operating and capital expenditure over the 2019 determination period was relatively small. Instead, we decided it was more appropriate for WaterNSW to report on a set of performance indicators to inform future reviews (including our expenditure and demand assessments), as shown in Table 4.5. These performance indicators form part of an information package WaterNSW submits to IPART every year for the Pipeline (the annual information return).

For the 2022 determination period, we consider WaterNSW should continue to report on these performance indicators over the next 4 years. We now have 2 years of performance data for the Pipeline (i.e. 2019-20 and 2020-21) but will require more data over a longer time frame to better inform our assessments about the Pipeline's performance.

Table 4.5 Performance indicators for the Pipeline

Category	Performance indicators
Revenue	Actual revenues in relation to: • The Pipeline's water transportation service • Offtake revenues
Expenditure	• Annual reporting on each of the Pipeline's capital expenditure and operating expenditure items, including electricity costs
Water quantity	• Monthly volume of water delivered to the bulk water storage facility • Monthly volume of water in the bulk water storage facility relative to total capacity of the facility • Monthly volume of water delivered to Essential Water • Monthly volume of water delivered to offtakes
Assets	• Energy usage by pump station at off-peak, shoulder and peak times each month (measured in kWh) • Number, type and size (in dollar terms) of efficiency initiatives effected under the O&M Contract's efficiency benefit sharing scheme • Electricity savings (defined as the John Holland Trility JV's actual electricity costs minus electricity payments made by WaterNSW to the JV) that are made under the O&M Contract's electricity saving sharing mechanism • Total number of times in which the Pipeline is placed in shutdown and standby modes • Frequency of times in which the Pipeline is placed in shutdown and standby modes by Essential Water

Source: IPART, WaterNSW Murray River to Broken Hill Pipeline, May 2019, p 80.

Our decision is:

9. That WaterNSW continue to report on the set of performance indicators for the Pipeline as part of its Annual Information Return (AIR), as outlined in Table 4.5.

Chapter 5

Other costs and revenue requirement

05

Summary of our decisions for other costs and revenue requirement

WaterNSW's total notional revenue requirement is $85.7 million

This amount is $12.4 million (12.6%) less than what WaterNSW proposed. The difference largely reflects our reduction in the WACC.

Of the total amount, around $85.5 million (99.9%) is for services to Essential Water while around $0.1 million (0.1%) is for services to offtake customers.[a]

WaterNSW's total return on assets is $44.6 million

For the 2022 determination period, the opening RAB for Essential Water is $411.4 million and we added forecast capital expenditure over the period of zero.

The opening RAB for offtake customers is $0.3 million and we added forecast capital expenditure over the period of about $10,000.

We used a real post-tax weighted average cost of capital (WACC) of 2.8% as the efficient rate of return.

WaterNSW's total return of assets (regulatory depreciation) is $21.1 million

We calculated this allowance using a straight-line depreciation method and by determining the appropriate asset lives for the assets in WaterNSW's RABs for services to Essential Water and offtake customers respectively.

WaterNSW's working capital allowance is $0.5 million

We set the allowance by calculating the net amount of working capital WaterNSW requires and multiplying it by the nominal post-tax WACC.

WaterNSW's total tax allowance is $1.3 million

We calculated the tax allowance using a tax rate of 30% and our standard methodology.

WaterNSW's cost of debt true-up is -$3.1 million

The 2019 WaterNSW price determination allowed for an end of period true-up to account for cumulative annual changes in the cost of debt over that determination period.

WaterNSW's net adjustment for 1 January start date is -$1.7 million

We made an adjustment of $0.5 million for foregone inflation in the period from 1 July 2022 to 31 December 2022. We also made an adjustment of -$2,2 million to reflect that WaterNSW will be over-recovering its revenue requirement over that period.

To set prices, we first determine the efficient costs that WaterNSW would require to deliver its services. The notional revenue requirement (NRR) represents our view of the total efficient costs of providing the regulated services to Essential Water and offtake customers in each year of the determination period. In general, we then set prices to recover this amount of revenue.

This chapter sets out our calculation of the notional revenue required to fund WaterNSW's regulated services over the 2022 determination period.

5.1 WaterNSW's total NRR is $85.7 million

Our decisions are:

10. To set the notional revenue requirement for services to Essential Water at $85.5 million over the 2022 determination period as shown in **Error! Reference source not found.**.

11. To set the notional revenue requirement for services to offtake customers at $0.1 million over the 2022 determination period as shown in **Error! Reference source not found.**.

Our decision for services to Essential Water is to set total NRR for the 2022 determination period at just over $85.5 million, which is $12.4 million (12.6%) lower than WaterNSW's proposed revenue requirement of $97.9 million. **Error! Reference source not found.** compares our decision on NRR for services to Essential Water with WaterNSW's proposal.

Table 5.1 Decision on notional revenue requirement for services to Essential Water ($'000, $2021–22)

Building block	2021-22[a]	2022-23	2023-24	2024-25	2025-26	Total
WaterNSW proposal						
Total notional revenue requirement		24,633	24,855	24,179	24,241	97,907
IPART decision						
Operating expenditure	3,727	5,655	5,484	4,840	4,900	20,878
Return on assets	16,350	11,361	11,214	11,067	10,920	44,561
Regulatory depreciation	5,140	5,247	5,247	5,247	5,247	20,989
Tax allowance	179	263	298	331	366	1,258
Return on working capital	880	108	123	121	120	473
Cost of debt true-up	0	-3,146	0	0	0	-3,146
Compensation for foregone inflation	0	532	0	0	0	532
Total notional revenue requirement	26,277	20,020	22,366	21,606	21,553	85,545
Difference proposed & IPART decision		*-4,613*	*-2,489*	*-2,573*	*-2,688*	*-12,362*
Difference proposed & IPART decision (%)		*-18.7%*	*-10.0%*	*-10.6%*	*-11.1%*	*-12.6%*

a The notional revenue requirement for 2021-22 presented in this table is based on the 2019 Determination, adjusted for inflation.

[a] Totals do not sum due to rounding.

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

Our decision for services to offtake customers is to set total NRR for the 2022 determination period at $0.1 million. Our decision is about 13.7% lower than WaterNSW's proposed revenue requirement. **Error! Reference source not found.** compares our decision on NRR for services to offtake customers with WaterNSW's proposal. All costs for offtake customers exclude the costs for the offtake provided under the land swap agreement.[b]

Table 5.2 Decision on notional revenue requirement for services to offtake customers ($'000, $2021–22)

Building block	2021-22[a]	2022-23	2023-24	2024-25	2025-26	Total
WaterNSW proposal						
Total notional revenue requirement		29	28	30	35	123
IPART decision						
Operating expenditure	10	1	1	1	1	5
Return on assets	14	9	9	8	8	34.5
Regulatory depreciation	15	15	15	16	17	63
Tax allowance	0	1	1	1	1	3.1
Return on working capital	1	0	0	0	0	1
Cost of debt true-up		0	0	0	0	0.0
Compensation for foregone inflation		1	0	0	0	1
Total notional revenue requirement	40	27	26	26	27	106
Difference proposed & IPART decision		*-2*	*-2*	*-4*	*-8*	*-17*
Difference proposed & IPART decision (%)		*-7.6%*	*-7.0%*	*-14.7%*	*-23.5%*	*-13.7%*

a The notional revenue requirement for 2021-22 presented in this table is based on the 2019 determination, adjusted for inflation.

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

[b] As part of the construction of the Pipeline, WaterNSW entered into an agreement with an offtake customer to waive access and usage charges (limited to 300,000KL usage to 2050) in exchange for permitting the access to part of their land (see WaterNSW, *Pricing proposal to IPART*, June 2021, p47). The costs associated with this offtake are borne by Essential Water.

5.2 We used the building block approach to calculate the NRR

We used the 'building block' approach to calculate WaterNSW's NRR for services to Essential Water and offtake customers respectively, as outlined in Chapter 2, This approach involves determining an allowance for each year of the determination period for each of the 5 components (or building blocks):

- operating expenditure (Chapter 3)
- return on the regulatory value of its assets (section 5.5 and Appendix B)
- return of those assets (regulatory depreciation) (section 5.4)
- an allowance for working capital (section 5.7)
- an allowance for meeting tax obligations (section 5.8).

The annual sum of these building block items is the NRR and represents our assessment of the total efficient costs WaterNSW should incur in delivering its services.

We also make an adjustment for the previous determination period, namely for the difference in the cost of debt (discussed in section 5.6).

5.3 We determine the regulatory asset base using our usual methodology

Our decisions for services to Essential Water are:

12. To calculate the regulatory asset base for services to Essential Water for 2019-20 to 2025-26 by using:
    - a 2019-20 opening regulatory asset base of $392.2 million. The regulatory asset base for each year is shown in Table 5.3 and Table 5.4
    - $3.9 million (nominal) of prudent and efficient historical capital expenditure added to the RAB over the 2019 determination period (Chapter 4)
    - forecast capital expenditure added to the RAB over the 2022 determination period of zero (Chapter 4)
    - asset disposals and cash capital contributions of zero.

Our decisions for services to offtake customers are:

13. To calculate the regulatory asset base for services to offtake customers for 2019-20 to 2025-26 by using:
    - a 2019-20 opening regulatory asset base of $0.4 million. The regulatory asset base for each year is shown in Table 5.5 and Table 5.6
    - capital expenditure added to the RAB over the 2019 determination period of zero (Chapter 4)
    - forecast capital expenditure added to the RAB over the 2022 determination period of around $10,000 (Chapter 4)
    - asset disposals and cash capital contributions of zero.

The regulatory asset base (RAB) represents the value of WaterNSW's assets on which it should earn a return on capital and an allowance for regulatory depreciation.

5.3.1 The opening regulatory asset base for services to Essential Water for the 2022 determination period is $411.4 million

We calculated the opening RAB for the 2022 determination period by rolling the RAB forward from the previous determination period. To roll the RAB forward from 1 July 2019 to 1 July 2022 we started with an opening RAB of $392.2 million and made the following adjustments:

- adding $3.9 million (nominal) of prudent and efficient historical capital expenditure (Chapter 4)[c]
- deducting zero for cash capital contributions and asset disposals (see section 5.3.3)
- deducting $15.1 million (nominal) for regulatory depreciation (section 5.4)
- adding $30.3 million of annual indexation of the RAB.

We also rolled the RAB forward from 1 July 2018 to 1 July 2019 because, at the time of the 2019 Determination, we had only forecast capital expenditure and inflation for 2018-19. Replacing forecast with actual capital expenditure and inflation means the opening RAB on 1 July 2019 is 0.3% higher than the closing RAB on 30 June 2019 as set out in the 2019 price review.[59]

Our RAB roll forward calculations for 2018-19 and the 2019 determination period are set out in Table 5.3.

[c] Total capital expenditure shown in Chapter 4 is slightly higher ($4.1 million) because the amounts in that chapter are presented in $2021-22, rather than in nominal terms.

Table 5.3 RAB calculation for the 2019 determination period for services to Essential Water ($'000, $ nominal)

RAB	2018-19	2019-20	2020-21	2021-22
Opening RAB	220,211	392,236	388,073	398,258
Plus: Efficient capital expenditure	157,231	1,859	456	1,600
Less: Cash capital contributions	0	0	0	0
Less: Asset disposals	0	0	0	0
Less: Regulatory depreciation	825	4,842	5,026	5,237
Plus: Indexation	4,781	-1,179	14,755	16,760
Plus: Financing costs[a]	10,838	0	0	0
Closing RAB	392,236	388,073	398,258	411,382

a. Financing costs are the costs associated with financing capital projects as expenditure is incurred up to the date of commissioning. The Pipeline was commissioned in April 2019.

Note: Totals may not sum due to rounding.

Source: IPART analysis.

We calculated the RAB in each year of the 2022 determination period by rolling forward the RAB to 2025–26 by:

- adding zero forecast capital expenditure (Chapter 4)
- deducting zero for forecast cash capital contributions and asset disposals (section 5.3.3)
- deducting $21.3 million for regulatory depreciation (section 5.4.4).

Our RAB roll forward calculations for the 2022 determination period are shown in Table 5.4.

Table 5.4 RAB calculation for the 2022 determination period for services to Essential Water ($'000, $2021–22)

RAB	2022-23	2023-24	2024-25	2025-26
Opening RAB	411,382	406,062	400,742	395,422
Plus: Efficient capital expenditure	0	0	0	0
Less: Cash capital contributions	0	0	0	0
Less: Asset disposals	0	0	0	0
Less: Regulatory depreciation	5,320	5,320	5,320	5,320
Closing RAB	406,062	400,742	395,422	390,102

Note: Totals may not sum due to rounding.

Source: IPART analysis.

5.3.2 The opening regulatory asset base for services to offtake customers for the 2022 determination period is $0.3 million

We calculated the opening RAB for the 2022 determination period by rolling the RAB forward from the previous determination period. To roll the RAB forward from 1 July 2019 to 1 July 2022 we started with an opening RAB of $0.4 million and made the following adjustments:

- adding zero for historical capital expenditure (Chapter 4)
- deducting zero for the cash capital contributions and asset disposals (section 5.3.3)
- deducting around $44,000 for regulatory depreciation (section 5.4.4)
- adding around $26,000 for annual indexation of the RAB.

We also rolled the RAB forward from 1 July 2018 to 1 July 2019 because, at the time of the 2019 Determination, we only had forecast capital expenditure and inflation for 2018-19. Replacing forecast with actual capital expenditure and inflation means the opening RAB on 1 July 2019 is about 0.1% higher than the closing RAB on 30 June 2019 as set out in the 2019 price review.[60]

Our RAB roll forward calculations for 2018-19 and the 2019 determination period are set out in Table 5.5.

Table 5.5 RAB calculation for the 2019 determination period for services to offtake customers ($'000, $ nominal)

RAB	2018-19	2019-20	2020-21	2021-22
Opening RAB	208	351	336	334
Plus: Efficient capital expenditure	131	0	0	0
Less: Cash capital contributions	0	0	0	0
Less: Asset disposals	0	0	0	0
Less: Regulatory depreciation	2	14	15	15
Plus: Indexation	4	-1	13	14
Plus: Financing costs[a]	10	0	0	0
Closing RAB	351	336	334	333

a Financing costs are the costs associated with financing capital projects as expenditure is incurred up to the date of commissioning. The Pipeline was commissioned in April 2019.

Note: Totals may not sum due to rounding.

Source: IPART analysis.

We calculated the RAB in each year of the 2022 determination period by rolling forward the RAB to 2025–26 by:

- adding around $10,000 for forecast capital expenditure (Chapter 4)
- deducting zero for forecast cash capital contributions and asset disposals
- deducting around $63,0000 for regulatory depreciation (section 5.4.4).

Our RAB roll forward calculations for the 2022 determination period are shown in Table 5.6.

Table 5.6 RAB calculation for the 2022 determination period for services to offtake customers ($'000, $2021–22)

RAB	2022-23	2023-24	2024-25	2025-26
Opening RAB	333	319	303	290
Plus: Efficient capital expenditure	1	0	2	6
Less: Cash capital contributions	0	0	0	0
Less: Asset disposals	0	0	0	0
Less: Regulatory depreciation	15	15	16	17
Closing RAB	319	303	290	280

Note: Totals may not sum due to rounding.

Source: IPART analysis.

5.3.3 WaterNSW has no cash capital contributions or asset disposals

Cash capital contributions refers to external funding that WaterNSW receives towards its capital expenditure, such as government grants or contributions from customers. Cash capital contributions are netted off capital expenditure before it (capital expenditure) enters the RAB. This ensures that customers do not pay a return on assets or regulatory depreciation for capital expenditure that has already been funded from other sources.

WaterNSW did not receive or anticipate receiving any cash capital contributions over the 2019 and 2022 determination periods.

Asset disposals can include asset sales, write-offs and write-downs. WaterNSW had no asset disposals over the 2019 determination period and proposed no disposals over the 2022 determination period. We accepted its proposal.

5.4 WaterNSW's total regulatory depreciation is $21.1 million

Our decisions are:

14. To calculate the allowance for return of assets (regulatory depreciation), using:
    - a straight-line depreciation method
    - for existing assets, the rolled forward asset lives from the 2019 determination period as listed in Table 5.7
    - for new assets, the asset lives listed in Table 5.7.

15. For services to Essential Water, to set the allowance for return of assets at $21.0 million over the 2022 determination period as shown in Table 5.8.

16. For services to offtake customers, to set the allowance for return of assets at $0.1 million over the 2022 determination period as shown in Table 5.8

We included an allowance for regulatory depreciation in the revenue requirement, to ensure the capital invested in regulatory assets is returned over the useful life of each asset. We calculated this allowance by determining the appropriate asset lives for the assets in WaterNSW's RABs and the appropriate depreciation method to use.

5.4.1 We used straight-line depreciation to calculate regulatory depreciation

Consistent with our usual approach, we used the straight-line depreciation method to calculate regulatory depreciation. Under this method, the assets in the RAB are depreciated by an equal value in each year of their economic life. We consider this method is superior to alternatives in terms of simplicity, consistency and transparency.

5.4.2 We maintained our approach for rolling forward asset lives for existing assets

We typically calculate the remaining lives of existing assets by rolling forward our previous determination to incorporate new efficient assets and accounting for asset disposals. We maintained this approach for the 2022 determination period for all asset categories rolled forward from the 2019 determination period.

For the 3 new asset categories, namely other support costs, the cost of the land swap agreement and Wentworth Ski Park rehabilitation costs (see Chapter 3), we accepted WaterNSW's proposal to depreciate these assets from 1 July 2022 over their expected lives. Our decisions are set out in Table 5.7.

5.4.3 We used an asset life of 4 years for offtake asset replacement costs

We used an asset life of 4 years for asset replacement costs for offtake customers. Our decision is based on the asset replacement schedule over 20 years, as provided to WaterNSW by the John Holland TRILITY JV as part of the Pipeline contract tender documents.

WaterNSW did not propose an asset life for new assets because it proposed to treat asset replacement costs for all customers as operating expenditure (Chapter 3 and Chapter 4).

We accepted WaterNSW's proposed asset lives for new assets in all other categories (Table 5.7).[d]

[d] However, these asset lives have no impact on our prices over the 2022 determination period because there is no capital expenditure on any of these categories.

Table 5.7 Decision on asset lives (years)

	Remaining lives of existing assets		Expected lives of new assets	
	Proposal	IPART decision	Proposal	IPART decision
Essential water				
- Pipeline	97	97	100	100
- Bulk water storage facility	77	77	80	80
- Plant and machinery (including pump stations and river intake)	22	22	25	25
- Buildings	57	57	60	60
- Other support costs	5	5	5	5
- Cost of land swap agreement	30	30	30	30
- Wentworth Ski Park Reserve Rehabilitation	60	60	60	60
Offtake customers				
Initial investments	22	22	25	25
Asset replacement	na	na	na	4

Note: For existing assets, the figures above are rolled forward asset lives from the 2019 determination period.
Source: IPART analysis and WaterNSW, Pricing Proposal to IPART, June 2021, p 52.

5.4.4 WaterNSW's proposal and our decision on regulatory depreciation are similar

Our return of assets allowance for services to Essential Water is $0.4 million (2.2%) higher over the 2022 determination period than proposed by WaterNSW. The difference is driven mainly by WaterNSW's updated 2020-21 capital expenditure[e] and updated inflation[f], offset slightly by lower capital expenditure than WaterNSW's proposed amount.

Our return of assets allowance for services to offtake customers 8.0% higher over the 2022 determination period than proposed by WaterNSW. The difference is driven by our decision to treat asset replacement costs for offtake customers as capital expenditure and updated inflation.

[e] We received WaterNSW's actual capital expenditure for 2020-21 in October 2021, after WaterNSW had submitted its proposal.
[f] We updated inflation for 2020-21 from 2.4% (forecast) to 3.8% (actual) and the forecast for 2021-22 from 2.5% to 4.2%.

Table 5.8 Decision on regulatory depreciation ($'000, $2021–22)

	2022-23	2023-24	2024-25	2025-26	Total
Essential Water					
WaterNSW proposal	5,132	5,132	5,132	5,150	20,546
IPART decision	5,247	5,247	5,247	5,247	20,989
Difference	*115*	*115*	*115*	*97*	*443*
Difference (%)	*2.2%*	*2.2%*	*2.2%*	*1.9%*	*2.2%*
Offtake customers					
WaterNSW proposal	14	14	14	14	58
IPART decision	15	15	16	17	63
Difference	*1*	*1*	*1*	*2*	*5*
Difference (%)	*4.5%*	*5.4%*	*7.5%*	*14.4%*	*8.0%*

Note: The allowance for return of assets is a mid-year figure (i.e. the RAB roll forward depreciation figure is discounted by half a year of WACC). It will therefore not match the end of year figures in Table 5.4 and Table 5.6. Totals may not sum due to rounding.
Source: IPART analysis and WaterNSW, Pricing Proposal to IPART, June 2021, p 52

5.5 WaterNSW's total return on assets is $44.6 million

Our decisions are:

17. For services to Essential Water, to set an allowance for return on assets of $44.6 million over the 2022 determination period (shown in Table 5.9). This is calculated by using:
    - the RAB values shown in Table 5.4
    - a real post-tax weighted average cost of capital of 2.8%
    - a sampling date of 31 March 2022 for market observations as outlined in Appendix B.

18. For services to offtake customers, to set an allowance for return on assets of about $35,000 over the 2022 determination period (shown in Table 5.9). This is calculated by using:
    - the RAB values shown in Table 5.6
    - a real post-tax weighted average cost of capital of 2.8%
    - a sampling date of 31 March 2022 for market observations as outlined in Appendix B.

We included an allowance for a return on assets in the revenue requirement to account for the opportunity cost of capital invested to provide regulated services. Our approach ensures the business can continue to make efficient capital investments in the future. We calculated the return on assets by multiplying the value of the RAB over the determination period by an efficient rate of return. As in previous reviews, we determined the rate of return using a weighted average cost of capital (WACC).

5.5.1 Our approach to forecasting inflation expectations remains unchanged

Our WACC methodology involves first calculating a nominal WACC based on current and long-term market parameters measured in nominal terms. We then subtract our best estimate of inflation expectations from this nominal WACC to generate a real WACC, which we use to set prices over the determination period. All else equal, a lower estimate of inflation expectations results in a higher real WACC.

Our standard approach to estimating inflation expectations is to take the geometric mean of the Reserve Bank of Australia's (RBA) 1-year ahead inflation forecast, and the midpoint of the RBA's target range (2.5%) for each other year of the determination period.

In its proposal, WaterNSW disagreed with our approach. It suggested using a glide path approach to estimating inflation expectations.[61] This was because:

- Inflation expectations over the 2022 determination period, at the time WaterNSW submitted its proposal, were significantly lower than the forecasts produced using IPART's approach.
- Other Australian regulators changed their approach to estimating inflation expectations to recognise the low inflation environment at the time. For example, the Essential Services Commission of South Australia, Australian Energy Regulator and Independent Competition and Regulatory Commission are using a glide path approach to the mid-point of the RBA's inflation target over a period.

We decided to maintain our current approach to estimating inflation expectations. We would need strong and compelling evidence to change how we estimate a single WACC parameter in isolation, because the financial market data underlying many elements of the WACC are interrelated. We consider it is more appropriate to consider the WACC methodology in a holistic and internally consistent way as part of our periodic WACC reviews. We intend to next review our WACC methodology in 2023.

5.5.2 We set the real rate of return on capital of 2.8%

As explained in Chapter 2, we used the WACC that would have applied had we set prices from 1 July 2022 so that there would be no windfall gains or losses due to the 1 January 2023 start date.

We used our standard methodology to calculate the WACC. Under our approach we estimate one WACC based on market data that is current at the time we set the WACC 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 mid-point of the current and long-term WACC values. The uncertainty index was within this range at the time we set the WACC. The average of the 2 WACC values is 2.8%. Appendix B shows the parameters we used to calculate the WACC. WaterNSW proposed a placeholder WACC of 3.7%, based on IPART's February 2021 Bi-annual WACC update.[62]

The WACC of 2.8% is set using market parameters as at 31 March 2022. It is influenced by the low interest rate environment that prevailed at the time. Under our standard methodology, interest rate increases or decreases over the 2022 determination period would be factored into the cost of debt true-up that would occur annually. The net changes would be factored in prices at the next determination. This end-of-period true-up adjustment would insulate WaterNSW to movements in interest rates.

5.5.3 The decision on return on capital allowance is 22% lower than proposed

Table 5.9 shows the resulting return on assets (i.e. RAB x WACC%), based on the RAB values set out in section 4.4, and our decisions to apply a real post-tax WACC of 2.8%. The return on capital allowance is 21.9% lower than that proposed by WaterNSW mostly because of the lower WACC value applied.

Table 5.9 Decision on return on assets ($'000, $2021–22)

	2022-23	2023-24	2024-25	2025-26	Total
Essential Water					
WaterNSW proposal	14,550	14,360	14,170	13,984	57,064
IPART's decision	11,361	11,214	11,067	10,920	44,561
Difference	*-3,190*	*-3,146*	*-3,103*	*-3,064*	*-12,503*
Difference (%)	*-21.9%*	*-21.9%*	*-21.9%*	*-21.9%*	*-21.9%*
Offtake customers					
WaterNSW proposal	12	11	11	10	44
IPART decision	9	9	8	8	35
Difference	*-3*	*-2*	*-2*	*-2*	*-9*
Difference (%)	*-21.4%*	*-21.2%*	*-20.9%*	*-19.8%*	*-20.9%*

Note: The allowance for return on assets for 2021-22 presented in this table is based on the 2019 determination, adjusted for inflation.: Totals may not sum due to rounding.
Source: IPART analysis and WaterNSW, Pricing Proposal to IPART, June 2021, p 60.

5.6 We included a cost of debt true-up in the NRR of -$3.1 million for the 2019 determination period

Our decision is:

19. To set a true-up for differences between the forecast and actual cost of debt over the 2019 determination period of
    - -$3.1 million for services to Essential Water
    - zero for services to offtake customers.

Our 2018 review of the WACC methodology introduced a trailing average cost of debt. We considered that this approach would allow regulated businesses to better manage their refinancing risk, while maintaining their incentives for efficient investment.

One consequence is that the WACC changes every year, as new tranches of debt are introduced to the trailing averages and the oldest tranches drop out. To address this, we decided at each price review we would consider whether to:

- update prices annually to reflect the updates in the WACC annually, or
- use a regulatory true-up at the next period, which we would pass through to prices at the beginning of the next period.[63]

These options are equivalent in present value terms to customers and WaterNSW.

The previous WaterNSW price review allowed for an end of period true-up to account for cumulative annual changes in the cost of debt over the 2019 determination period.[64] Overall, the annual updates resulted in a lower cost of debt relative to the cost of debt allowed for in the WACC. WaterNSW proposed a negative adjustment of $3.6 million.[65] We reviewed the calculation and decided to include a negative adjustment of $3.1 million.

We accepted WaterNSW's proposal to allocate the total value of the cost of debt true-up to Essential Water. We are of the view that Essential Water is better able than offtake customers to bear the risk of price volatility due to the true-up over consecutive regulatory periods.

5.6.1 An end-of-period true-up will account for annual changes in the WACC over the 2022 determination period

In its proposal, WaterNSW proposed an end of period cost of debt true-up for the 2022 determination period.66 We agree with WaterNSW and have decided to undertake the regulatory true-up at the next price review, as we have done for the 2019 determination period. This approach provides greater certainty to Essential Water about their prices over the determination period – that is, changes in prices would be impacted by inflation only, rather than also being impacted by annual changes in the cost of debt.

5.7 WaterNSW's working capital allowance is less than $1 million

Our decision is:

20. To set the working capital allowance for services to Essential Water and offtake customers for the 2022 determination period as shown in Table 5.10.

The working capital allowance component of the NRR represents the return the business could earn on the net amount of working capital it requires each year to meet its service obligations. It ensures the business recovers the costs it incurs due to the time delay between providing a service and receiving the money for it (i.e. when bills are paid).

In 2018, we developed a standard approach to calculate the working capital allowance, which can be found on our website.[67] We applied the standard approach to this review.

The amount we allowed for the 2022 determination period for services to Essential Water and offtake customers represents the holding cost of net current assets (Table 5.10). The allowance is lower than that proposed by WaterNSW because both the WACC and net working capital we used are lower.[g]

Table 5.10 Decision for the working capital allowance ($'000, $2021–22)

	2022-23	2023-24	2024-25	2025-26	Total
Essential Water					
WaterNSW proposal	144	153	151	149	596
IPART decision	108	123	121	120	473
Difference	*-36*	*-30*	*-30*	*-28*	*-123*
Difference (%)	*-24.8%*	*-19.4%*	*-19.7%*	*-19.0%*	*-20.7%*
Offtake customers					
WaterNSW proposal	0	0	0	0	1
IPART decision	0	0	0	0	1
Difference	*-2%*	*-2%*	*-2%*	*-3%*	*-9%*
Difference (%)	*-10.0%*	*-11.2%*	*-12.7%*	*-13.7%*	*-11.9%*

Note: Totals may not sum due to rounding.

Source: IPART analysis and WaterNSW, Pricing Proposal to IPART, June 2021, p 64.

[g] Our working capital allowance is lower than WaterNSW's proposed amount because we used a lower WACC (5.5%) than WaterNSW (5.7%) and because our receivables are lower due to a lower overall revenue requirement. We use a nominal post-tax WACC to calculate the return on working capital.

5.8 WaterNSW's tax allowance is $1.3 million

Our decisions are:

21. To adopt the regulatory tax allowance for services to Essential Water and offtake customers as shown in Table 5.11, using:
    - a tax rate of 30%
    - IPART's standard methodology.

We included 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 (Table 5.9). This tax allowance reflects the regulated business's forecast tax liabilities.

Table 5.11 Decision on tax allowance ($'000, $2020–21)

	2022–23	2023–24	2024–25	2025–26	Total
Essential Water					
WaterNSW proposal	1,184	1,197	1,209	1,220	4,809
IPART decision	263	298	331	366	1,258
Difference	*-921*	*-898*	*-878*	*-854*	*-3,551*
Difference (%)	*-77.8%*	*-75.1%*	*-72.6%*	*-70.0%*	*-73.8%*
Offtake customers					
WaterNSW proposal	1	1	1	1	5
IPART decision	1	1	1	1	3
Difference	*-1*	*-1*	*-1*	*0*	*-2*
Difference (%)	*-53.2%*	*-46.2%*	*-39.7%*	*-31.9%*	*-42.6%*

Note: Totals may not sum due to rounding.

Source: IPART analysis and WaterNSW, Pricing Proposal to IPART, June 2021, p 61.

We calculated 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.h We applied our standard methodology to set the tax allowance. The allowance is lower than that proposed by WaterNSW mainly because we used a lower WACC.

Our tax allowance is not intended to recover WaterNSW's actual tax liability over the determination period. Rather, it reflects the liability that a comparable commercial business would be subject to. Including this allowance is consistent with our aim to set prices that reflect the fully efficient costs a utility would incur if it were operating in a competitive market. It is also consistent with the principle of competitive neutrality – that is, that a government business should compete with private business on an equal footing and not have a competitive advantage due to its public ownership.

h Under a post-tax framework, the value of franking credits (gamma) enters the regulatory decision only through the estimate of the tax liability. The value of gamma is given as a WACC parameter in Appendix B.

5.9 We made 2 adjustments due to a 1 January start date

We made 2 adjustments due to the delaying the start date for the new prices. Firstly, we made an adjustment to compensate WaterNSW for the revenue lost due to inflation from 1 July 2022 to 31 December 2022 (because the current prices apply over that period). For services to Essential Water we added $0.5 million to the revenue requirement and for service to offtake customers we added $685 to the revenue requirement (see **Error! Reference source not found.** and **Error! Reference source not found.**).

Secondly, before we set the prices effective from 1 January 2023, we made a further adjustment to reflect that WaterNSW will be over-recovering its revenue requirement for the period from 1 July 2022 to 31 December 2022. Over-recovery occurs because current net prices are higher than the prices that will apply from 1 January 2023. As Table 5.12 shows, the additional revenue from higher access prices ($3.0 million) more than offsets the lower amount of revenue from the current (lower) usage prices (-$0.8 million). We reduced the amount of revenue WaterNSW recovers from prices that apply from 1 January 2023 by a net amount of $2.2 million.

Table 5.12 Decision on adjustments for 1 January start date ($'000, $2021–22)

	Essential Water	Offtake customers	Total
Adjustment for inflation			
Compensation for inflation in revenue requirement	532	1	533
Adjustment for over-recovery			
Adjustment for over-recovery of service charges	-3,033	-3	-3,036
Adjustment for under-recovery of usage charges	802	0	802
Total adjustment for over-recovery	-2,231	-2	-2,233
Net adjustment due to 1 January start date			
Net adjustment	-1,699	-2	-1,700

Note: Totals may not sum due to rounding

Source: IPART analysis

5.10 We smoothed the revenue requirement before setting prices

We then set a target revenue for each year for each service; that is, the actual revenue we expect WaterNSW to generate from prices for that year for each service. We smoothed the revenue requirement across the determination period to make access prices constant in real terms over the 3.5 years. In making this decision on target revenue, we considered a range of factors, including implications on price levels, the rate at which they would change, and any impacts on WaterNSW's customers, namely Essential Water and offtake customers.

Table 5.13 Decision on target revenue ($'000, $2021–22)

	2022-23	2023-24	2024-25	2025-26	NPV of Total
Essential Water					
Notional revenue requirement	20,020	22,366	21,606	21,553	79,697
Target revenue [a]	23,542	20,822	20,471	20,467	79,697
Difference	*3,522*	*-1,545*	*-1,135*	*-1,086*	*0*
Difference (%)	*17.6%*	*-6.9%*	*-5.3%*	*-5.0%*	*0.0%*
Offtake customers					
Notional revenue requirement	27	26	26	27	99
Target revenue[a]	29	26	26	26	99
Difference	*1*	*0*	*0*	*-1*	*0*
Difference (%)	*4.9%*	*-0.6%*	*-0.9%*	*-3.9%*	*0.0%*

a. The target revenue amounts in 2022-23 is substantially higher than the amounts in subsequent years because the current (higher net) prices apply from 1 July 2022 to 31 December 2022, before the new (lower net) prices take effect on 1 January 2023.

Note: Totals may not sum due to rounding

Source: IPART analysis.

Chapter 6

Forecast customer numbers and water sales

06

Summary of our decisions for customer numbers and water sales

We set forecast customer numbers for the Pipeline based on WaterNSW's proposal

This means the Pipeline's primary customer is Essential Water. There are also 5 offtake customers located along the Pipeline's route to Broken Hill. These are in line with the customer numbers we used to set prices in 2019.

We set forecast water sales volume at around 5,500 ML per year

For Essential Water, we set the water volumes per year at around 5,500 ML. This is in line with our expectations that the Pipeline will be used to meet majority of water needs in the Broken Hill region. For offtake customers, we set the water volumes per year at around 4 ML reflecting the latest actual water volumes to these customers.

A key step in our price setting process is to decide on the Pipeline's forecasts for customer numbers and water sales. These forecasts are used to determine the price levels necessary to recover the Pipeline's revenue requirements. It is important that forecasts are as accurate as possible so that prices can best reflect efficient costs and WaterNSW can recover the efficient costs of the Pipeline.

This chapter outlines our assessment of WaterNSW's proposed forecast customer numbers and water sales. It explains why we set them at the level we have for the 2022 determination period. It also details how these forecasts changed over time and what drove those changes.

For this review, WaterNSW has one major customer – Essential Water – and will also transport water to a number of offtakes along the Pipeline during the 2022 determination period. Its proposed forecast water sales volumes to Essential Water assumed the Pipeline would be used to transport water and meet water needs in the Broken Hill region.

We engaged the CIE to help us review whether the proposed forecasts are efficient and should be used to set prices over the 2022 determination period. The CIE's review of WaterNSW's proposal and its recommendations are available on our website.

6.1 We accepted WaterNSW's proposal on customer numbers

Our decision is:

22. To accept WaterNSW's proposed customer and offtake numbers over the 2022 determination period as shown in Table 6.1.

The Pipeline's primary customer is Essential Water. The main purpose of the Pipeline is to transport water to provide Essential Water with a source of bulk water to improve the security of water supply for its customers in the Broken Hill region.

WaterNSW will also use the Pipeline to transport water to a number of offtakes along the Pipeline's route to Broken Hill. WaterNSW currently has 5 offtakes located at Kudgee Station, Netley Cattle Yards, Netley Station, Pinepoint/Sunnydale and Balaclava.

In the 2019 review, we set forecast customer and offtake numbers at one and 5 respectively when setting prices for the Pipeline.[68] Over the past 3 years, WaterNSW's reported actual numbers were the same as forecasts used in the 2019 review.[69]

For the 2022 Determination, WaterNSW proposed to maintain the forecast customer and offtake numbers (see Table 6.1). Further, it noted that it was not aware of any additional offtakes that are imminent or likely to be required over the next few years.[70]

Our demand consultant, the CIE, considered the proposal is reasonable and appropriate to apply for the 2022 determination period.[71] Therefore, our decision is to accept WaterNSW's proposal and set forecast customer and offtake numbers as shown in Table 6.1.

Table 6.1 Decision on forecast customer and offtake numbers

	Average 2019[a]	2022-23	2023–24	2024–25	2025–26
WaterNSW proposal					
Essential Water	1[b]	1	1	1	1
Offtakes	5[b]	5	5	5	5
IPART decision					
Essential Water	1[c]	1	1	1	1
Offtakes	5[c]	5	5	5	5

a. This column represents the average customer and offtake numbers during the 2019 determination period.
b. This represents the average of actuals for 2019-20 and estimates for 2020-21 and 2021-22 reported by WaterNSW for the Pipeline.
c. This represents the average customer and offtake numbers per year as set out in the 2019 Determination.

Source: IPART analysis and WaterNSW, Pricing Proposal to IPART, June 2021, p 66.

6.2 We considered the proposal for water sales volumes was largely reasonable

Our decision is:

23. To set the Pipeline's total water sales volumes as shown in Table 6.2, which are marginally lower than WaterNSW's proposed forecasts by around 0.5% per year.

Over the 2022 determination period, our decision is to slightly reduce WaterNSW's total water sales volumes by around 0.5% per year as compared to WaterNSW's proposal. This reflects our decisions to:

- adopt the forecast water sales to customers in Broken Hill as set out in our concurrent review of Essential Water's prices as a baseline in estimating the water demand from the Pipeline
- make upward adjustments to this baseline to account for water losses within Essential Water's existing network
- accept WaterNSW's proposed water sales volumes from the 5 offtakes.

Table 6.2 summarises our decisions on forecast water sales volumes over the 2022 determination period. These forecasts are:

- 0.5% lower per year than proposed by WaterNSW
- 24% higher per year than the forecasts used to set prices in 2019
- 4% lower per year than recommended by the CIE.

Table 6.2 Decision on forecast water sales volumes (ML)

	Average 2019[a]	2022-23	2023–24	2024–25	2025–26
WaterNSW proposal					
Essential Water	5,787[b]	5,575	5,553	5,531	5,510
Offtakes	3[b]	3	3	3	3
Total	5,790[b]	5,577	5,556	5,534	5,513
The CIE recommendations					
Essential Water	N/A	5,792	5,769	5,746	5,723
Offtakes	N/A	4	4	4	4
Total	N/A	5,796	5,773	5,750	5,727

	Average 2019[a]	2022-23	2023–24	2024–25	2025–26
IPART 2019 decision[c] and 2022 decision					
Essential Water	4,386[c]	5,549	5,527	5,505	5,483
Offtakes	50[c]	4	4	4	4
Total	4,436	5,553	5,531	5,509	5,487
Difference (total, in ML)	-1,354	-24	-25	-25	-26
Difference (total, in %)	-23.4%	-0.4%	-0.4%	-0.5%	-0.5%

a. This column represents the average water sales volumes per year during the 2019 determination period.
b. This represents the average of actuals for 2019-20 and estimates for 2020-21 and 2021-22 reported by WaterNSW for the Pipeline.
c. This represents the average water sales per year as set out in the 2019 Determination.

Note: This excludes the assumptions around evaporative losses at the bulk water storage.

Source: IPART analysis, The CIE, WaterNSW's Broken Hill Pipeline bulk water transport volume demand and energy review, December 2021, p 4 and WaterNSW, Pricing Proposal to IPART, June 2021, p 68.

6.2.1 Water sales volumes to Essential Water are around 5,500 ML per year

In our 2019 Determination, we set water sales volumes to Essential Water at around 4,400 ML per year. At the time of the review, we considered Essential Water could source water to meet some of the water demand from the Broken Hill community using its own water supply infrastructure.[72] Therefore, we assumed the Pipeline would be used to meet about 70% of the water demand in Broken Hill.

Over the last 3 years, WaterNSW reported actual water volumes to Essential Water were significantly higher than the levels used to set prices. Actual volumes were largely similar to the volumes WaterNSW proposed in 2019.[73] Further, WaterNSW explained that the significant variances were because Essential Water relied on the Pipeline to transport water to meet the community's water demand rather than using its own supply infrastructure.

For the 2022 determination period, WaterNSW proposed to set forecasts at around 5,542 ML per year. This was based on Essential Water's detailed forecasts[74] and closely matches the proposal in our concurrent review of Essential Water's prices.[75] Further, the proposals from these utilities assume Essential Water would mostly use the Pipeline to meet the water demand in Broken Hill.

The CIE reviewed the proposal and it found the proposal to be efficient noting that:

- it was able to verify the historical preference for Essential Water to source its bulk water needs by transporting water from the Murray River via the Pipeline since 2019
- it was able to verify with Essential Water using the Pipeline to transport water and meet the water demand in the Broken Hill region for the 2022 determination period[76]
- it found Essential Water's proposal on water usage volumes to be mostly efficient. However, it recommended very small increases to account for the latest available data.

Our decision is to set the Pipeline's annual forecast water sales volumes to Essential Water at around 5,500 ML per year. We agree with WaterNSW, Essential Water and the CIE that it is efficient to use the Pipeline to transport water and meet the water demand in Broken Hill. Stakeholders did not comment on demand for the WaterNSW Pipeline. However, stakeholders have commented on water use in Broken Hill as part of our Essential Water price review. While there is no impact at this stage for the Pipeline's water transportation volumes, this could affect the amount of water transported by the Pipeline in the future.

In any water supply system, there are system losses as a result of leaking pipes, main breaks, system flushing, etc. Essential Water treats these water losses as non-revenue water for billing purposes. However, Essential Water will need to transport water to cover these losses. In our concurrent review of Essential Water's prices, we decided to set real water losses at 460 ML per year.

6.2.2 Water sales volumes to offtakes are around 4 ML per year

In our 2019 Determination, we set water sales volumes to offtake at around 50 ML per year. This was based on WaterNSW's previous proposed water sales volumes of 10 ML per offtake and 5 offtakes over the 2019 determination period.[77] During the 2019 determination period, WaterNSW reported actual water sales volumes were around 4 ML in 2019-20 and 2020-21.[78] This was partly because no water was taken from 2 offtakes[79]. In addition, the higher rainfall in 2020-21 may have reduced water sales from offtakes.[80] For the 2022 determination period, WaterNSW forecasts water sales to be around 3 ML per year,[81] which is about 20% below 2020-21 actual water sales volume.[82]

The CIE assessed the proposal and raised some concerns, including:[83]

- WaterNSW was unable to explain why forecasts are below actuals in 2019-20 and 2020-21
- WaterNSW's forecasts appear to correlate with climate conditions in 2020-21, therefore assuming higher rainfall is carried over the 2022 determination period.

Therefore, the CIE recommended to use the 2020-21 actual volumes of 3.6 ML as the basis for the forecasts for the 2022 determination period. This is because 2020-21 actual is the latest full year of data currently available. Our decision is to accept the CIE's recommendations.

Chapter 7

Price structures and prices

07

Summary of our decisions on prices

Water transportation prices would decrease

Compared to current prices, our decisions are to reduce the following prices in the first year of the 2022 determination period:

- The access price for Essential Water by 24.5% (before inflation).
- The fixed price for offtake customers by 18.5% (before inflation).

We are then holding these prices constant over the subsequent 3 years.

We are increasing the usage price for Essential Water and offtake customers by 65.3% (before inflation) by the end of the 2022 determination period.

The usage price is increasing because WaterNSW's energy costs are now higher. However, the access price (for Essential Water) and fixed price (for offtake customers) is decreasing due to WaterNSW's lower financing costs driven by us applying a WACC of 2.8%.

As discussed in Chapter 8, total bills will decrease for Essential Water and offtake customers. This is because the increase in the usage price is more than offset by the decreases in the access or fixed prices, which represent a larger share of bills.

We have maintained the current price structures for Essential Water and offtake customers

Our decision is to accept WaterNSW's proposal and maintain the price structures that were set in the 2019 Determination. The current price structure for WaterNSW efficiently recovers the costs of supplying water to Essential Water and offtake customers.

We have continued to defer regulating restart, standby and shutdown prices

Our decision is to accept WaterNSW's proposal and continue to defer regulating shutdown, standby and restart prices. Instead, they can be negotiated between WaterNSW and Essential Water on a commercial basis. The costs of shutdown, standby and restart services are driven by Essential Water, therefore the costs should continue to be internalised by Essential Water.

We have continued to allow WaterNSW to enter into unregulated pricing agreements with offtake customers

Our decision is to continue to allow WaterNSW to enter into unregulated pricing agreements. For example, if WaterNSW wishes to offer an upfront capital charge to new offtake customers, it has the flexibility to negotiate with them to enter into unregulated pricing agreements.

This chapter explains our decisions on price structures and prices for the Pipeline. This chapter also explains our decision to allow for unregulated pricing agreements between WaterNSW and offtake customers.

7.1 Water transportation prices for Essential Water would change

Table 7.1 sets out our decisions on WaterNSW's water transportation prices for Essential Water, before inflation. Compared to current prices, our decisions are to:

- Increase the usage price for Essential Water by 65.3% by the end of the 2022 determination period.
- Reduce the access price for Essential Water by 24.5% in the first year of the 2022 determination period. We are then holding this price constant over the subsequent 3 years.

In comparison, WaterNSW proposed to:

- Increase the usage price for Essential Water by 3.6% by the end of the 2022 determination period.
- Reduce the access price for Essential Water by 5.3% in the first year of the 2022 determination period, and then hold it constant over the subsequent 3 years.

Table 7.1 Water transportation prices for Essential Water ($2021-22) – without inflation

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26
IPART decision						
Usage price ($/ML)	212.52	499.14	403.39	350.46	351.20	65.3%
Access price ($/day)	67,281	50,798	50,798	50,798	50,798	-24.5%
WaterNSW proposal						
Usage price ($/ML)	212.52	221.84	220.79	220.48	220.18	3.6%
Access price ($/day)	67,281	63,698	63,524	63,698	63,698	-5.3%

Note: The usage price for Essential Water includes an allowance for evaporative issues.
Source: IPART analysis, WaterNSW, Pricing Proposal to IPART, June 2021, p 76.

We adjust WaterNSW's prices each year for inflation. Table 7.2 shows our water transportation prices for Essential Water that will apply in 2022-23, including inflation of 5.1%.

Table 7.2 Water transportation prices for Essential Water ($2022-23) – with inflation

	2022-23	Change from current to 2022-23
Usage price ($/ML)	524.60	146.8%
Access price ($/day)	53,389	-20.6%

Source: IPART analysis.

In this chapter and in Chapter 8, our analysis and decisions may indicate prices and bills paid by Essential Water. However, prices and bills for Essential Water are currently covered by a subsidy paid by the NSW Government on behalf of NSW taxpayers.[84] This is discussed in more detail in our concurrent review of prices that Essential Water can charge for water and wastewater services in Broken Hill.

7.2 Water transportation prices for offtake customers would change

Table 7.3 sets out our decisions on WaterNSW's water transportation prices for offtake customers, before inflation. Compared to current prices, our decisions are to:

- Increase the usage price for offtake customers by 65.3% by the end of the 2022 determination period.
- Reduce the fixed price for offtake customers by 18.5% in the first year of the 2022 determination period. We are then holding this price constant over the subsequent 3 years.

In comparison, WaterNSW proposed to:

- Increase the usage price for offtake customers by 3.6% by the end of the 2022 determination period.
- Reduce the fixed price for offtake customers by 5.3% by the end of the 2022 determination period.

Table 7.3 Water transportation prices for offtake customers ($2021-22) – without inflation

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26
IPART decision						
Usage price ($/kL)	0.21	0.50	0.40	0.35	0.35	65.3%
Fixed price ($/day)	20.78	16.93	16.93	16.93	16.93	-18.5%
WaterNSW proposal						
Usage price ($/kL)	0.21	0.22	0.22	0.22	0.22	3.6%
Fixed price ($/day)	20.78	20.22	20.17	20.22	20.22	-2.7%

Source: IPART analysis, WaterNSW, Pricing Proposal to IPART, June 2021, p 78.

Table 7.4 shows our water transportation prices for offtake customers that will apply in 2022-23, including inflation of 5.1%.

Table 7.4 Water transportation prices for offtake customers ($2022-23) – with inflation

	2022-23	Change from current to 2022-23
Usage price ($/kL)	0.52	146.8%
Fixed price ($/day)	17.79	-14.4%

Source: IPART analysis.

7.3 We have maintained the current price structures for Essential Water and offtake customers

Our decision is:

24. To maintain WaterNSW's current price structures for Essential Water and offtake customers.

Our decision is to accept WaterNSW's proposal and maintain the price structures set in 2019.[85] The current price structure efficiently recovers the costs of supplying water to Essential Water and offtake customers. It also aligns with our pricing principles (see Box 7.1). In addition, there has been no significant change in circumstances that would warrant a change in the existing price structure.

In 2019 we adopted a two-part tariff for Essential Water and offtake customers, with WaterNSW's fixed costs recovered through an access price (or fixed price) and WaterNSW's variable costs recovered through a usage price. This means that WaterNSW currently charges:

- An access price ($/day) to Essential Water, which covers the fixed costs for building and maintaining the Pipeline, as well as the fixed electricity costs of transporting water through the Pipeline.
- A fixed price ($/day) to each offtake customer, which covers WaterNSW's additional fixed costs for providing water to the offtake customer.
- A usage price ($/ML) to Essential Water and ($/kL) to offtake customers, which covers the Pipeline's efficient variable costs, being the energy cost associated with delivering a ML or kL of water to Essential Water and offtake customers (as applicable).

The purpose of the Pipeline is to supply Essential Water (and its customers in Broken Hill) with water. This means Essential Water is guaranteed a right to the Pipeline's transportation services, whereas offtake customers do not have the same guaranteed right. Therefore, Essential Water pays for the fixed costs of the Pipeline, while offtake customers pay the incremental fixed costs associated with their supply.

See Table 7.5 for more detail on WaterNSW's current price structures.

Table 7.5 WaterNSW's price structure for Essential Water and offtake customers

To recover	Essential Water pays	Offtake customers pay
Fixed costs	**Access price** ($/day) recovering the fixed costs of the Pipeline including: • internal and corporate costs • operational and maintenance costs • funding costs of the Pipeline (debt & equity) • forecast tax liabilities and depreciation of the Pipeline and • fixed energy costs associated with the fixed energy use.	**Fixed price** ($/day) recovering the fixed costs of the offtake assets including • funding costs • depreciation and • forecast tax liabilities associated with the delivery of offtake services.
Variable costs	**Usage price** ($/ML) levied on the volume of water take. It recovers the variable energy cost of the Pipeline including:	**Usage price** ($/kL) levied on the volume of water take. It is the same as the usage price charged to Essential Water.

To recover	Essential Water pays	Offtake customers pay
	• network demand costs, including fees for the network variable charge and the maximum demand charge • wholesale energy costs • retail costs • costs of carbon abatement.	

Source: IPART analysis

Box 7.1 Pricing principles for regulated water businesses

In setting maximum prices for regulated water businesses, our overarching principle is that prices should be cost-reflective. This means that:

- Prices should only recover sufficient revenue to cover the efficient costs of delivering the monopoly services. Prices for individual services should reflect the efficient costs of delivering the specific service.
- Price structures should match cost structures, whereby:
  - usage prices reference an appropriate estimate of marginal cost (i.e. the additional cost of transporting an additional unit of water), and
  - fixed service prices recover the remaining costs.
- Customers imposing similar costs on the system pay similar prices.

Prices that are cost-reflective promote the efficient allocation and use of resources – such as water and the capital invested to provide water transportation services – by sending accurate signals to customers about the cost of those services. For example, they discourage wasteful or unnecessary water usage.

Prices that are cost-reflective also promote efficient investment in water infrastructure and service provision – by ensuring that the regulated business cannot recover capital that is invested inefficiently or unwisely through the prices paid by customers.

In deciding on price structures, we also consider customers' preferences and whether the resulting prices are transparent, easy for customers to understand and for the business to administer.

7.4 We have increased the usage price for Essential Water and offtake customers

Our decision is:

25. To increase the usage price to $351 per ML for Essential Water and $0.35 per kL for offtake customers (before inflation) by the end of the 2022 determination period.

We are increasing Essential Water's usage price to $351 per ML for Essential Water and $0.35 per kL for offtake customers (before inflation) by the end of the 2022 determination period.

Our decisions mean Essential Water and offtake customers will be paying 65.3% more (before inflation) for the usage price by the end of the 2022 determination period than under current prices.

In the Draft Report we proposed decreasing the usage price by 3.0% by the end of the 2022 determination period. Since the Draft Report we have revised WaterNSW's energy costs and have increased the variable component. This has the effect of increasing the usage price. For more information on WaterNSW's energy costs see Chapter 3.

7.5 We have decreased the access price for Essential Water

Our decision is:

26. To decrease the access price for Essential Water to $50,798 per day in the first year of the 2022 determination period and then hold it constant (before inflation) over the following 3 years.

We have decreased the access price for Essential Water from $67,281 per day to $50,798 per day in the first year of the 2022 determination period. We will then hold it constant (before inflation) over the 2022 determination period.

Our proposed access price means Essential Water will be paying $16,483 (or 24.5%) (before inflation) less per day throughout the 2022 determination period than under current prices.

7.6 We have decreased the fixed price for offtake customers

Our decision is:

27. To decrease the fixed price for offtake customers to $16.93 per day in the first year of the 2022 determination period and then hold it constant (before inflation) over the following 3 years.

We have decreased the fixed price for offtake customers from $20.78 to $16.93 per day in the first year of the 2022 determination period. We will then hold it constant (before inflation) over the 2022 determination period.

Our prices mean offtake customers will be paying $3.85 (18.5%) (before inflation) per day less over the 2022 determination period than under current prices.

7.7 We have continued to defer regulating shutdown, restart and standby prices

28. To continue to defer regulating shutdown, restart and standby prices for Essential Water.

Our decision is to accept WaterNSW's proposal and continue to defer regulating shutdown, standby and restart prices.[86] Instead, they can be negotiated between WaterNSW and Essential Water on a commercial basis. The costs of shutdown, standby and restart services are driven by Essential Water, therefore the costs should be internalised by Essential Water.

WaterNSW can request the Pipeline operator to cease the operation of the Pipeline at Essential Water's request. Conditions for these requests are negotiated between Essential Water and WaterNSW[a].[87] In 2019, we said we would consider this issue again in the next determination period.[88] It is still our opinion that an unregulated commercial arrangement between WaterNSW and Essential Water is the most efficient method to levy these prices.

Essential Water should continue to ensure that it can achieve its water supply requirements at an efficient cost. Therefore, Essential Water should choose to incur these costs if it lowers its overall total cost of supply. These costs should not be automatically passed through to Essential Water's customers.

We consider that an unregulated commercial arrangement is the best method for WaterNSW to levy these charges on Essential Water. An unregulated commercial arrangement will ringfence these costs directly to Essential Water and not its customers. In its submission to our Issues Paper, Essential Water stated that it was comfortable to continue with the current arrangement for shutdown, standby and restart prices to be negotiated on a commercial basis.[89]

We note that the access price would still apply under shutdown, standby and restart services.

WaterNSW accepted our draft decision to continue to defer regulating shutdown, restart and standby prices.[90]

[a] Additional costs for placing the Pipeline in shutdown mode are incurred under the O&M contract.

7.8 We have continued to allow WaterNSW to enter into unregulated pricing agreements with offtake customers

Our decision is:

29. To continue to allow unregulated pricing agreements between WaterNSW and offtake customers.

We have made a decision to continue to allow unregulated pricing agreements between WaterNSW and offtake customers.

Unregulated pricing agreements are optional and only entered into if both parties agree. An unregulated pricing agreement is an agreement that allows the parties to charge/pay a price that is different to the price determined by IPART, over the determination period, and which is entered into after the 2022 determination period commences. If the parties do not enter into an unregulated agreement, then the maximum price specified in the 2022 Determination will apply.

WaterNSW proposed we set an upfront capital charge, so new offtake customers have the option to pay $77,319 (i.e. the capital cost of their offtake up-front) and then pay only the usage price.[91] This price is stipulated in the O&M agreement between WaterNSW and the O&M contractor.[92]

In its submission to our Issues Paper, PIAC noted that upfront payment of capital costs for new connections should be allowed, provided they are cost-reflective and ensure there is no difference between future maintenance costs of the Pipeline paid by new and existing consumers.[93]

In discussions with IPART, WaterNSW indicated the upfront capital price was intended to work in an unregulated pricing agreement.[94] It is voluntary and is intended to be negotiated between WaterNSW and the offtake customer. There is no fixed term for which it applies.

After discussions with WaterNSW, we do not consider it appropriate that we set an upfront capital charge. This is because:

- We do not have sufficient information to determine the efficient costs of providing an upfront capital charge for a specific term. The $77,319 price proposed by WaterNSW was determined by its O&M contractor.
- WaterNSW indicated it was not based on a specific term, but instead represented the O&M contractor's assessment of the upfront costs to upgrade a new offtake customer. WaterNSW would still need to negotiate the term limit (i.e. the period where there are no additional capital charges payable with the new offtake customer).

We consider unregulated pricing agreements would allow flexibility for both parties to negotiate the price, any future costs and any specific costs to the new offtake customer.

To ensure that the regulated cost base and regulated prices continue to reflect the efficient costs of providing regulated services in the future, WaterNSW would be required to 'ringfence' any changes in costs resulting from unregulated price agreements. This information would be assessed and factored into resetting expenditure allowances at the next price review.

Chapter 8

Impacts of our pricing decisions

Impacts of our pricing decisions

Essential Water and offtake customers' bills would decrease

Essential Water and offtake customers' bills would decrease over the 2022 determination period, before inflation under our decisions. WaterNSW's proposed bills for Essential Water and offtake customers would decrease less than under our prices. Actual bills for offtake customers will depend on usage.

Essential Water's total NRR would be lower compared to WaterNSW's proposal

Essential Water's total NRR would be approximately $13 million lower under our prices than under WaterNSW's proposal.

WaterNSW will be able to meet service standards for its customers

We are satisfied that WaterNSW can achieve operating and efficiency savings, receive sufficient revenue to achieve service standards at or above those expected by customers and to meet the standards required by its regulators.

Our decisions will allow WaterNSW to remain financeable over the regulatory period

Our benchmark financeability test indicates our decisions will allow WaterNSW to remain financeable over the regulatory period. We have not identified any concerns around WaterNSW's ability to raise or refinance debt or to have sufficient operating cash flows to service its debt.

We have considered impacts on the Consolidated Fund

There are no impacts on the Consolidated Fund as a result of our decisions. We also have considered potential impacts on the consolidated fund under Section 16 of the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW) (IPART Act).

WaterNSW can recover all efficient costs in meeting its environmental obligations

We have ensured WaterNSW can fully recover all efficient costs it incurs in meeting its environmental obligations.

There are no significant impacts on general inflation as a result of our decisions

Our decision to reduce WaterNSW's water transportation bills will not put upward pressure on general inflation.

8.1 Essential Water's bills would decrease

Under our prices, Essential Water's bill would decrease by 20.5% in total over the 2022 determination period (before inflation, see Table 8.1). WaterNSW proposed a smaller decrease in Essential Water's bill of 5.0% (before inflation) in total over the 2022 determination period.

The decrease in Essential Water's total bill is mostly driven by us applying a WACC of 2.8%.

Essential Water's water transportation bill is currently covered by a subsidy paid by the NSW Government on behalf of NSW taxpayers.[95] This is discussed in more detail in our concurrent review of prices that Essential Water can charge for water and wastewater services in Broken Hill.

Table 8.1 Essential Water's bills ($'000s, $2021-22) – without inflation

	2021-22 (current)	2022-23[a]	2023-24[b]	2024-25	2025-26	Change 2021-22 to 2025-26
IPART decision						
Usage bill	1,189	1,968	2,230	1,929	1,926	61.9%
Access price bill	24,558	21,574	18,592	18,541	18,541	-24.5%
Total bill	25,747	23,542	20,822	20,471	20,467	-20.5%
WaterNSW proposal						
Usage bill	1,189	1,231	1,220	1,214	1,207	1.5%
Access price bill	24,558	23,250	23,250	23,250	23,250	-5.3%
Total bill	25,747	24,481	24,470	24,463	24,457	-5.0%

a. We have delayed the commencement of new prices until 1 January 2023, therefore the access price component of the total bill will be higher in 2022-23 due to prices from the 2019 determination continuing for an extra 6 months. However, we have decreased the access price further to compensate for this.
b. The access price component of the bill will increase in 2023-24 because it will be a leap year.

Source: IPART analysis

We adjust WaterNSW's bills each year for inflation. Table 8.2 shows our water transportation bill for Essential Water that will apply in 2022-23, including inflation of 5.1%.

Table 8.2 Essential Water's bill to apply from 1 January 2023 ($'000s, $2022-23) – with inflation

	2022-23	Change from current to 2022-23
Usage bill	2,038	71.4%
Access price bill	22,043	-10.2%
Total bill	24,081	-6.5%

Source: IPART analysis

8.2 Offtake customers' bills would decrease

The analysis for bills for offtake customers is based on:

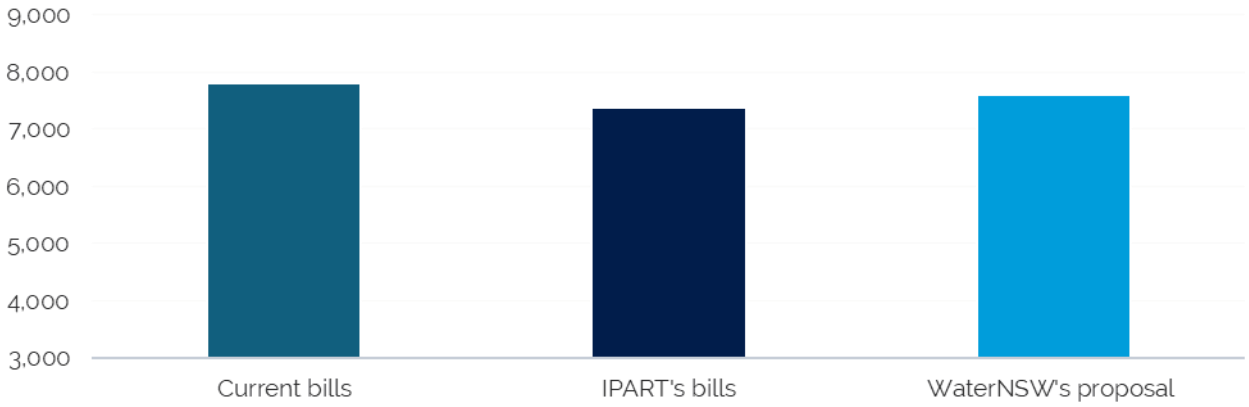
- Small customers using 0.5ML of water per year.
- Medium customers using 1ML of water per year.
- Large customers using 5ML of water per year.

Our decisions will result in overall decreases in bills over the 2022 determination period (see Table 8.3). This is because the increase in the usage price is more than offset by the decrease in the fixed price, which represents a larger share of bills. A medium customer would see its bill decrease by 16.2% (before inflation) in total over the 2022 determination period.

WaterNSW proposed a smaller decrease in offtake customers' bills. Under WaterNSW's proposal, a medium customer would see its bill decrease 2.5% (before inflation) in total over the 2022 determination period (see Table 8.4).

Figure 8.1 outlines how our prices affect the bills of medium sized customers over the 2022 determination period (before inflation), compared to WaterNSW's proposal.

Figure 8.1 Annual bills for medium customers (1 ML) in $2021-22 over the 2022 determination period



Source: IPART analysis

As outlined in Chapter 6, we have made a decision to accept WaterNSW's proposed forecast offtake customers at 5. We assume one offtake customer per offtake asset. Bills are decreasing mainly as a result of the WACC reducing the fixed price for offtakes.

Table 8.3 Bill impacts for offtake customers ($2021-22) – without inflation

	2021-22 (current)	2022-23[a]	2023-24[b]	2024-25	2025-26	Change 2021-22 to 2025-26
Small customers (0.5 ML)						
Usage bill	106	250	202	175	176	65.3%
Fixed price bill	7,585	6,888	6,197	6,180	6,180	-18.5%
Total bill	7,691	7,138	6,398	6,355	6,355	-17.4%
Medium customers (1 ML)						
Usage bill	213	499	403	350	351	65.3%
Fixed price bill	7,585	6,888	6,197	6,180	6,180	-18.5%
Total bill	7,797	7,387	6,600	6,530	6,531	-16.2%
Large customers (5 ML)						
Usage bill	1,063	2,496	2,017	1,752	1,756	65.3%
Fixed price bill	7,585	6,888	6,197	6,180	6,180	-18.5%
Total bill	8,647	9,384	8,214	7,932	7,936	-8.2%

a. We have delayed the commencement of new prices until 1 January 2023, therefore the fixed price component of the total bill will be higher in 2022-23 due to prices from the 2019 determination continuing for an extra 6 months. However, we have decreased the fixed price further in subsequent years to compensate for this. For large offtake customers, the combined effect of the delay and increase in the usage price will result in higher bills for the first year before bills reduce to levels below the current level in the subsequent years of the determination period.
b. The fixed price component of the bill will increase in 2023-24 because it will be a leap year.

Source: IPART analysis

Table 8.4 Bill impacts for offtake customers under WaterNSW's proposed prices ($2021-22) – without inflation

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	2021-22 to 2025-26 % change
Small customers (0.5 ML)						
Usage bill	106	111	110	110	110	3.6%
Fixed price bill	7,585	7,381	7,381	7,381	7,381	-2.7%
Total Bill	7,691	7,492	7,492	7,492	7,492	-2.6%
Medium customers (1 ML)						
Usage bill	213	222	221	220	220	3.6%
Fixed price bill	7,585	7,381	7,381	7,381	7,381	-2.7%
Total Bill	7,797	7,603	7,602	7,602	7,602	-2.5%
Large customers (5 ML)						
Usage bill	1,063	1,109	1,104	1,102	1,101	3.6%
Fixed price bill	7,585	7,381	7,381	7,381	7,381	-2.7%
Total Bill	8,647	8,491	8,485	8,484	8,482	-1.9%

Source: IPART analysis, WaterNSW, Pricing Proposal to IPART, June 2021, p 79.

8.2.1 After taking inflation into account, our decisions mean most offtake customers' bills would decrease by around 3% to 5% in 2022-23

Table 8.5 shows our water transportation bills for offtake customers that will apply in 2022-23, including inflation of 5.1%.

Table 8.5 Offtake customers' bills to apply from 1 January 2023 ($2022-23) – with inflation

	2022-23	Change from current to 2022-23
Small customers (0.5 ML)		
Total bill	7,306	-5.0%
Medium customers (1 ML)		
Total bill	7,568	-2.9%
Large customers (5 ML)		
Total bill	9,667	11.8%

Source: IPART analysis

8.3 Essential Water's total NRR would be lower over the 2022 determination period compared to WaterNSW's proposal

Under our prices for the Pipeline, Essential Water's total NRR would be $12.63 million less over the determination period, compared to WaterNSW's proposal. The change in NRR largely reflects the current WACC of 2.8% driving down the rate of return on assets (see Chapter 5.5)

As set out in Table 8.6, our decisions result in an 91% increase in Essential Water's total NRR over the 2022 determination period, compared to its NRR excluding the Pipeline.

Table 8.6 Essential Water's NRR including and excluding our Pipeline costs ($'000s, $2021-22)

	2022-23	2023-24	2024-25	2025-26	Total
Essential Water's NRR excluding the Pipeline	23,269	23,527	24,054	23,289	94,140
Pipeline costs	23,542	20,822	20,471	20,467	85,302
Increase in working capital and tax allowances[a]	114	102	100	100	417
Essential Water's NRR including the Pipeline	46,926	44,451	44,625	43,856	179,859
% change due to Pipeline	102%	89%	86%	88%	91%

a. Including the Pipeline increases the value of net working capital

Source: IPART analysis

For comparison, Table 8.7 shows the increase in Essential Water's total NRR compared to its NRR excluding the Pipeline under WaterNSW's pricing proposal.

Table 8.7 Essential Water's NRR including and excluding WaterNSW's proposed Pipeline costs ($'000s, $2021-22)

	2022-23	2023-24	2024-25	2025-26	Total
Essential Water's NRR excluding the Pipeline	23,269	23,527	24,054	23,289	94,140
Pipeline costs	24,481	24,470	24,463	24,457	97,871
Increase in Essential Water's working capital and tax allowances[a]	119	120	120	120	479
Essential Water's NRR including the Pipeline[b]	47,869	48,117	48,637	47,866	192,489
% change due to Pipeline	106%	105%	102%	106%	104%

a. Including the Pipeline increases the value of net working capital
b. WaterNSW's proposed Pipeline costs are adjusted for forecast volumes.

Source: IPART analysis, WaterNSW, Pricing Proposal to IPART, June 2021, pp 70-71

8.4 Impacts on WaterNSW

8.4.1 WaterNSW will be able to meet service standards for its customers

We expect WaterNSW to achieve operating efficiency savings compared to its pricing proposal. We are satisfied that WaterNSW can achieve these savings, and thus receive sufficient revenue to achieve service standards at, or above, those expected by customers and to meet the standards required by its regulators.

As outlined in Chapters 3 and 4, we have included efficiency savings in WaterNSW's operating and capital expenditure. While we are accepting some of WaterNSW's proposal on operating and capital expenditure, we have made efficiencies that reflect our views on corporate overheads and past capital expenditure.

Our decisions will not reduce service levels for Essential Water and offtake customers.

8.4.2 Our decisions will allow WaterNSW to remain financeable over the regulatory period

Our benchmark financeability test does not suggest there are any financeability concerns for WaterNSW as a result of our decisions.

Before finalising our pricing decisions, we undertake a financeability test to assess how our pricing decisions are likely to affect the business's financial sustainability and ability to raise funds to manage its activities over the upcoming regulatory period.

Our financeability tests forecast WaterNSW's Real FFO over Debt metric to be below target over the 2022 determination period. In its response to our draft decision, WaterNSW said that this indicates the business has insufficient cash flow to service its full debt obligation.[96] WaterNSW also stated that "if the Pipeline fails on one metric but passes on another, IPART should use this result to diagnose the source of the problem".[97] WaterNSW commented that it is insufficient to identify that there is an issue without addressing the underlying factors.[98]

WaterNSW requested that IPART increase the WACC or increase the depreciation allowance (or both) to ensure WaterNSW passes all elements of the financeability test.[99]

To assess WaterNSW's financeability over the 2022 determination period, we analysed its forecast financial performance, financial position and cash flows for the benchmark business. We then forecast financial ratios and assessed these against our target ratios.

We conduct financeability tests using 3 steps:

1. calculate using our standard financial ratios
2. analyse the trends in these ratios over the determination period
3. determine whether there is a financeability concern or not.

Step 1: Calculate our standard financial ratios

We have conducted the benchmark financeability test on the Pipeline only. This is because we have insufficient up to date financial information on WaterNSW's other businesses to undertake a financeability test on WaterNSW's whole business.

Box 8.1 Our financeability target ratios for the benchmark test

Real Interest Coverage Ratio (RICR) >2.2x

The RICR is a measure of the business's ability to service interest payments on debt. We developed our target value for the RICR with reference to the RICR used by Moody's, S&P Global and Fitch Ratings. In 2018 we reviewed how we conduct financeability tests and concluded that the RICR should be set at >2.2x.[100]

Real FFO over Debt >7.0%

FFO over Debt measures how much free cash a business generates (i.e. after covering its operating costs, interest expense and tax) relative to the size of its total borrowings. Therefore, it is a measurement of a business's ability to generate cash flows to repay the principal of the debt.

Net Debt/RAB Gearing ratio <70%

Gearing is a measurement of the entity's financial leverage, which demonstrates the degree to which it is funded by creditors. A higher gearing ratio means a higher-risk capital structure – that is, a higher proportion of assets are funded by debt which, unlike equity, requires fixed interest payments that the business must continue to maintain over time. A gearing ratio above 70% would indicate a relatively high-risk capital structure.

In our 2018 review of financeability tests, we placed greater emphasis on the RICR and the FFO over Debt ratios and placed less emphasis on the Gearing ratio.[101] The RICR and FFO over Debt ratios both measure whether the business generates sufficient cash flows to remain financeable. Our view is that focusing on the cash flows of the business is very important in assessing financeability.

Step 2: Analyse the trends in the financial ratios over the 2022 determination period

Table 8.8 Financeability test results

	Target ratios	2022-23	2023-24	2024-25	2025-26
Real Interest Coverage Ratio (RICR)					
Benchmark test	>2.2x	4.0x	3.4x	3.5x	3.5x
Does it meet the target?		✓	✓	✓	✓
Real FFO over Debt					
Benchmark test	>7.0%	5.4%	4.4%	4.6%	4.6%
Does it meet the target?		✗	✗	✗	✗

	Target ratios	2022-23	2023-24	2024-25	2025-26
Net Debt / RAB					
Benchmark test	<70%	60%	60%	60%	60%
Does it meet the target?		✓	✓	✓	✓

Source: IPART analysis

Benchmark test – RICR

The benchmark RICR is expected to far exceed the target of 2.2x over the 2022 determination period (the benchmark RICR is forecast between 3.4 and 4.4 over the period). By consistently exceeding the target, this indicates WaterNSW can very comfortably meet its annual interest expense.

Benchmark test – Real FFO over Debt

The benchmark FFO over debt ratio is forecast to be below the target by 2.3 percentage points on average over the 2022 determination period. From a low of 4.4% in 2023-24, the FFO ratio will improve to 4.6% in years 2024-25 to 2025-26.

The below target result is driven largely by the unique characteristics of the WaterNSW Pipeline. The benchmark target for the FFO over Debt ratio is based on a hypothetical water utility which would have mix of assets with a shorter average asset life. This would result in a higher return of assets (depreciation) and greater renewal expenditure. By contrast, the WaterNSW Pipeline is a new asset with a very long economic life with no need for significant renewal capex over the upcoming period. This means a lower depreciation allowance and a (slowly) declining regulatory asset base on which WaterNSW earns a return on capital. These factors, along with a relatively low WACC, put downward pressure on the FFO over Debt ratio.

Benchmark test – Net Debt/RAB Gearing ratio

The benchmark Net Debt/RAB Gearing ratio will always reflect our decision on the gearing ratio adopted in our WACC estimation. Our review of market evidence supports maintaining a gearing ratio for an efficient benchmark firm at 60%, which is below the upper target limit of 70% under our benchmark test.

Step 3: Conclusion

Reading the benchmark results together, we have not identified a financeability concern for WaterNSW. It is our view that our decisions will allow WaterNSW to remain financially viable and continue to provide sustainable services over the 2022 determination period.

Having considered WaterNSW's submission on financeability, we disagree with its assertion that the below target result on the FFO/Debt metric constitutes a material issue. We therefore do not accept its request to make adjustments to its revenue allowance or increase the WACC so it can pass all aspects of the financeability test.

Below we outline a range of other factors that support WaterNSW's financeability over the 2022 determination period.

There is significant headroom in the RICR

WaterNSW is forecast to have a RICR well above the target over the 2022 determination period. This indicates that WaterNSW could still comfortably meet its interest payments, even if interest rates increase significantly over the determination period, under our benchmark assumptions.

The FFO over Debt result is not significant in the medium to long term

The below target FFO over Debt ratio is explained by the combined effects of the current low WACC and the unique characteristics of the WaterNSW Pipeline, explained above.

The methodology used in the FFO over Debt ratio test is based on a hypothetical 'typical' utility, which may cause businesses like WaterNSW to score below target on this metric. We are reviewing the ratios used in the financeability test in our upcoming WACC review and we will be examine how they can be improved to better reflect the circumstances of a business like WaterNSW.

Transparent and predictable regulatory framework results in revenue predictability

We have followed the well-established principles of our building block framework when reviewing and setting WaterNSW's prices and revenue allowances over the 2022 determination period. We consider the transparency of our regulatory framework and the resulting revenue stability and predictability supports WaterNSW's long-term financial sustainability.

The visibility of future cash flows that is generated by the regulatory framework provides WaterNSW with an opportunity to implement counter measures to protect its credit risk profiles. These counter measures could include finding efficiency savings, re-profiling expenditure, seeking equity injections or using retained earnings or dividends withheld to pay down debt.

8.5 Matters to be considered by IPART under the IPART Act

For a full list of our considerations required by the IPART Act please see Appendix A.

8.5.1 We have considered impacts on the Consolidated Fund

Under Section 16 of the IPART Act, IPART is 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 equivalents and dividends paid to the Consolidated Fund will fall. The extent of this fall will depend on NSW 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. Under our modelling, 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.

Our prices for the WaterNSW Pipeline will reduce Essential Water's water transportation costs by about 21%, before inflation. This means the level of the current Government subsidy would also fall by about 21%. The NSW Government has confirmed it will continue to subsidise the cost of the WaterNSW Pipeline over the entire 2022 determination period. WaterNSW can recover all efficient costs in meeting its environmental obligations.[102]

8.5.2 WaterNSW can recover all efficient costs in meeting its environmental obligations

The NSW Government is responsible for determining the risk of negative impacts from WaterNSW's operations on the environment, and imposing standards or requirements to address these risks and minimise any impacts. WaterNSW and the O&M operator have environmental responsibilities in the operation of the Pipeline. For example, the O&M operator must develop, implement and maintain management plans that ensure compliance with environmental standards.[103] More generally, WaterNSW is required to meet the environmental obligations in its Operating Licence.[104] In determining WaterNSW's revenue requirements, we have ensured WaterNSW can fully recover all efficient costs it incurs in meeting its environmental obligations through prices.

8.5.3 There are no significant impacts on general inflation as a result of our decisions

Under Section 15 of the IPART Act, we are required to consider the effect of our determinations on general price inflation.

We have made decisions to reduce the bills for WaterNSW's water transportation services. Although the usage price is increasing, this more than offset by the decreases in the access or fixed prices, which represent a larger share of bills. Therefore, our decisions will not put upward pressure on general inflation.

Appendix A

Matters to be considered by IPART under the IPART Act

This appendix explains how we have considered matters we are required to consider under the *Independent Pricing and Regulatory Tribunal Act 1992* (the IPART Act)[a].

A.1 Matters under section 15(1) of the IPART Act

IPART is required under section 15(1) of the IPART Act to have regard to the following matters in making determinations and recommendations:

a. The cost of providing the services concerned

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

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

d. The effect on general price inflation over the medium term

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

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

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

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

i. The need to promote competition in the supply of the services concerned

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

k. The social impact of the determinations and recommendations

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

Table A.1 outlines the sections of the report that address each matter.

[a] The IPART Act 1992 is available here.

Table A.1 Consideration of section 15(1) matters by IPART

Section 15(1)	Report reference
a) Cost of providing the services	Chapters 3 and 4 set out our forecast of the total efficient costs WaterNSW will incur to deliver its water transportation services. Further detail is provided in Chapters 5 and 6 on other costs, NRR and forecast water sales and demand.
b) Protection of consumers from abuses of monopoly power	We consider our decisions would protect consumers from abuses of monopoly power, as they reflect the efficient costs WaterNSW requires to deliver its services. This is addressed throughout the report, particularly in Chapter 3 and 4 (where we establish the prudent historical costs and efficient forecast costs) and Chapter 7 (where we set out our pricing decisions).
c) Appropriate rate of return and dividends	Chapter 5 outlines that we have allowed a market based-based rate of return on debt and equity, and that this will enable a benchmark business an efficient level of dividends to its owner.
d) Effect on general price inflation	Chapter 8 outlines that the impact of our prices on general inflation is negligible.
e) Need for greater efficiency in the supply of services	Chapters 3 and 4 set out our decisions on the Pipeline's prudent historical expenditure and efficient forecast expenditure. These decisions would promote greater efficiency in the supply of WaterNSW's water transportation services.
f) Ecologically sustainable development	Chapters 3 and 4 set out the Pipeline's prudent historical expenditure and efficient forecast expenditure that allows it to meet all of its regulatory requirements, including its environmental obligations.
g) Impact on borrowing, capital and dividend requirements	Chapters 5 and 8 explain how we have provided WaterNSW with an allowance for a return on and of capital, and our assessment of financeability.
h) Impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body	Chapters 3 and 4 determine the prudent and efficient cost of the design and construct (D&C) and operation and maintenance (O&M) contracts which WaterNSW has entered into for the provision of the Pipeline's water transportation services.
i) Need to promote competition	In determining efficient costs, we have been mindful of relevant principles such as competitive neutrality (e.g. we have included a tax allowance for WaterNSW as set out in Chapter 5).
j) Considerations of demand management and least cost planning	Chapters 3 and 4 outline how we have assessed the Pipeline's prudent historical and efficient forecast expenditure required to deliver its transportation service at least cost. Chapter 7 outlines how we have set prices to reflect efficient costs, including the usage price to reflect the approximate estimate of marginal cost of supply – such cost-reflective prices promote the efficient use and distribution of resources (all else being equal).
k) Social impact	Chapter 8 considers the potential impact of our pricing decisions on WaterNSW, its customers and the NSW Government (on behalf of the broader community).
l) Standards of quality, reliability and safety	Chapters 3 and 4 detail our consideration of WaterNSW's prudent historical and efficient forecast costs so that it can meet the required standards of quality, reliability and safety in delivering its services.

IPART is required under section 14A(2) of the IPART Act to have regard to the following matters:

a. the government agency's economic cost of production
b. past, current or future expenditures in relation to the government monopoly service
c. charges for other monopoly services provided by the government agency
d. economic parameters, such as discount rates, or movements in a general price index (such as CPI), whether past or forecast
e. a rate of return on the assets of the government agency
f. a valuation of the assets of the government agency
g. 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
h. the need to promote competition in the supply of the service concerned
i. considerations of demand management (including levels of demand) and least cost planning.

Table A.2 outlines the sections of the report that address each matter.

Table A.2 Consideration of section 14A(2) matters by IPART

Section 14A(2)	Report reference
a) Government agency's economic cost of production	Chapters 3 and 4 set out WaterNSW's total efficient costs to deliver its regulated services over the determination period.
a) Expenditures in relation to the government monopoly service	Chapters 3 and 4 set out our decisions on WaterNSW's efficient historical and forecast expenditure.
b) Charges for other monopoly services	Chapter 7 sets out our decisions on WaterNSW's prices for other monopoly services.
c) Economic parameters, such as discount rates, or movements in CPI	Chapter 5 sets out how we have indexed WaterNSW's regulatory asset base to account for inflation. Chapter 7 explains how we have set prices to raise revenue that recovers efficient costs over the determination period in net present value terms.
d) Rate of return on the assets of the government agency	Chapter 5 outlines that we have allowed a market-based rate of return on debt and equity which would enable a benchmark business to return an efficient level of dividends.
e) Valuation of the assets	Chapter 5 sets out the value of WaterNSW's assets on which we consider it should earn a return on capital and an allowance for regulatory depreciation.
f) Ecologically sustainable development	Chapters 3 and 4 set out WaterNSW's efficient historical and forecast expenditure that allows it to meet all of its regulatory requirements, including its environmental obligations.
g) Need to promote competition in determining efficient costs,	We have been mindful of relevant principles such as competitive neutrality for example we have included a tax allowance for WaterNSW as set out in Chapter 5.

h)	Considerations of demand management and least cost planning	Chapters 3 and 4 outline how we have assessed WaterNSW's efficient historical and forecast expenditure required to deliver its regulated services at least cost. Chapters 7 and 8 outlines how we have set prices to reflect efficient costs, including the usage price to reflect the approximate estimate of marginal cost of supply – such cost-reflective prices promote the efficient use and distribution of resources (all else being equal).

Appendix B

Weighted average cost of capital

To calculate an allowance for the return on assets in the revenue requirement, we multiply the value of the regulatory asset base in each year of the determination period by an appropriate rate of return. To do this, we determine the rate of return using a weighted average cost of capital (WACC).

This appendix shows the parameters we used to calculate the WACC and explains our decision about how to treat annual changes in the WACC over the 2022 determination period.

B.1 We use our standard approach to calculate the WACC

We used our standard methodology to calculate the WACC. Under our approach 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 mid-point of the current and long-term WACC values. The uncertainty index was within this range at the time we set the WACC.

Table B.1 sets out the parameters used to derive the 2.8% post-tax real WACC.

Table B.1 WACC calculation using IPART's standard approach

	Step 1 – Market data	
	Current	**Long term**
Nominal risk-free rate	1.7%	2.5%
Inflation	2.6%	2.6%
Implied Debt Margin	2.3%	2.4%
Market Risk premium	8.2%	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)	7.4%	6.7%
Cost of equity (real post-tax)	4.7%	4.0%
Cost of debt (nominal pre-tax)	4.0%	4.9%
Cost of debt (real pre-tax)	1.4%	2.2%
Nominal vanilla (nominal post-tax) WACC	5.4%	5.6%
Post-tax real WACC	**2.7%**	**2.9%**
Pre-tax nominal WACC	6.2%	6.4%
Pre-tax real WACC point estimate	3.5%	3.7%

	Step 2 – Final WACC range		
	Lower	**Mid-point**	**Upper**
Nominal vanilla (nominal post-tax) WACC	5.4%	5.5%	5.6%
Post-tax real WACC	**2.7%**	**2.8%**	**2.9%**
Pre-tax nominal WACC	6.2%	6.3%	6.4%
Pre-tax real WACC point estimate	3.5%	3.6%	3.7%

Source: IPART calculations.

B.2 Our methodology to calculate WACC parameters

Sections B.3 to B.7 explain the methodology for each parameter used to calculate the WACC under our standard approach.

B.3 Gearing and beta

In selecting proxy industries, we consider the type of business the firm is in. If we can't directly identify proxy firms that are in the same business, we would consider what other industries exhibit returns that are comparably sensitive to market returns.

We adopted the standard values of 60% gearing and an equity beta of 0.7. We undertook preliminary proxy company analysis on several different types of industries with risk profiles that appear similar to water utilities. The results for the electric utilities industry and the multiline utilities activity support continuing to use an equity beta of 0.7 when 60% gearing is used. While some other industries and activities analysed suggest a higher beta, the sample sizes for those proxy groupings are too small to warrant making what would be a major change from the status quo.

B.4 Sampling dates for market observations

We sampled all market observations to the end of March 2022, which was the latest available whole month for prices from 1 July 2022. As explained in Chapter 2, we used the WACC that would have applied had we set prices from 1 July 2022 so that there would be no windfall gains or losses due to the 1 January 2023 start date.

For earlier years in the trailing average calculation of the historic cost of debt we sampled to the end of March in each year. We chose that date so the Final Report WACC would consistently sample the same month for all years.

Our inflation forecast was produced using IPART's standard approach, [105] with the Reserve Bank of Australia 1-year ahead forecast sourced from the February 2022 Statement of Monetary Policy.

B.5 Tax rate

We assumed the Benchmark Equivalent Entity is a large public water utility. The scale economies that are important to firms of this type suggested the Benchmark Equivalent Entity would be likely to be well above the turnover threshold at which a firm becomes ineligible for a reduced corporate income tax rate. Therefore, we used a tax rate of 30%.

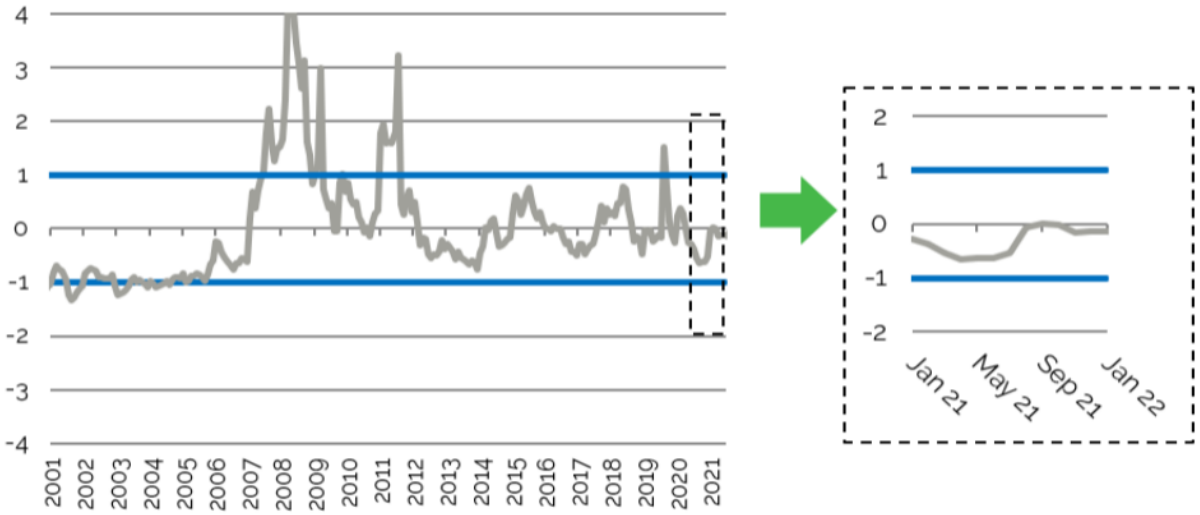
B.6 Application of trailing average method

Our 2018 review of the WACC method introduced a decision to estimate both the long-term and current cost of debt using a trailing average approach, which updates the cost of debt annually over the regulatory period. As foreshadowed in our 2018 review of the WACC method, we employed a transition to trailing average in the calculations presented above.

B.7 Uncertainty index

We tested the uncertainty index for market observations to the end of March 2022. It was within the bounds of plus and minus one standard deviation of the long-term mean value of zero. Therefore, we maintained the default 50%/50% weighting between current and historic market estimates of the cost of debt and the cost of equity (Figure B.1).

Figure B.1 IPART's uncertainty indexs



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