IPART

Independent Pricing and Regulatory Tribunal
New South Wales

Murray River to Broken Hill Pipeline

WaterNSW

Issues Paper
Water

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The Independent Pricing and Regulatory Tribunal (IPART)

IPART provides independent regulatory decisions and advice to protect and promote the ongoing interests of the consumers, taxpayers and citizens of NSW. IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from IPART's website: https://www.ipart.nsw.gov.au/Home.

Tribunal Members

The Tribunal members for this review are:

Dr Peter J Boxall AO, Chair

Mr Ed Willett

Ms Deborah Cope

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

Matthew Mansell (02) 9113 7770

Chirine Dada (02) 9019 1929

Invitation for submissions

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

Submissions are due by 30 October 2018

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

You can also send comments by mail to:

Prices for WaterNSW's Murray River to Broken Hill Pipeline services from 1 July 2019
Independent Pricing and Regulatory Tribunal
PO Box K35
Haymarket Post Shop NSW 1240

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

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

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

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1 Introduction

The Independent Pricing and Regulatory Tribunal of NSW ('IPART' or 'we') is conducting a review of the maximum prices WaterNSW can charge for the water transportation services provided by the Murray River to Broken Hill Pipeline (the Pipeline).

In June 2016 the NSW Government announced[1] that it would build a new pipeline from the Murray River to secure Broken Hill and surrounding communities' long term water supply.[2] In December 2016 the NSW Government announced the appointment of WaterNSW to build, own and operate the Pipeline.[3] In addition to serving Broken Hill and surrounding communities, WaterNSW also proposes to serve a small number of offtake customers located along the Pipeline. WaterNSW will own the Pipeline, but has appointed a joint venture led by John Holland to design, construct, operate and maintain the Pipeline.[4] WaterNSW reports that the Pipeline will be completed and ready for water by December 2018.[5] Further details on the Pipeline including a schematic of it and how construction has progressed to date are provided in Appendix A.

This review will set maximum prices for the Pipeline services to apply from 1 July 2019 for a period of four (or potentially five) years.

1.1 What is the scope of this review?

This review will set prices that WaterNSW can charge its customers (ie, Essential Water[6] and offtake customers) for water transportation services provided by the Pipeline. These prices will be set to reflect the prudent and efficient cost of designing, constructing, operating and maintaining the Pipeline to the specifications set out in the NSW Government's directions to WaterNSW.[7]

In determining the total efficient cost, we will not interrogate the Government's direction to WaterNSW to build the Pipeline. However, we will assess the processes followed and the decisions made in the delivery of the Pipeline to ensure prices reflect prudent and efficient costs.

1 Available at: https://www.nsw.gov.au/your-government/the-premier/media-releases-from-the-premier/new-pipeline-to-secure-broken-hill-water-supply/
2 Available at: https://www.industry.nsw.gov.au/__data/assets/pdf_file/0016/143053/Pipeline-to-secure-Broken-Hills-water.pdf
3 Available at: https://www.industry.nsw.gov.au/water/water-utilities/infrastructure-programs/broken-hill-pipeline
4 Available at: https://www.waternsw.com.au/about/newsroom/2017/htriver-murray-to-broken-hill-pipeline-contract-awarded
5 Available at: https://www.waternsw.com.au/projects/wentworth-to-broken-hill-pipeline
6 Essential Energy, through its Essential Water business, provides water and other related services to customers in Broken Hill and the surrounding areas of Menindee, Sunset Strip and Silverton.
7 NSW Government directions to WaterNSW are summarised and presented in Appendix C.

This review will also consider the question of who should pay for the Pipeline. We will apply our cost sharing principles and framework to determine what share of the efficient cost should notionally be paid for by customers (ie, Essential Water and offtake customers) and what share of the efficient cost should be paid for by the NSW Government on behalf of the broader community.[8]

We note the section 16a direction to IPART (see Appendix C) requires IPART to set WaterNSW's maximum prices in this determination to reflect the prudent and efficient costs of providing the Pipeline services. Therefore, to the extent we determine there is a case for a Government cost share in the Pipeline review, the Government contribution to account for this will be reflected in the separate, but concurrent Essential Water price determination.

Although this review will determine the efficient cost of the Pipeline and set WaterNSW's prices to Essential Water and offtake customers, this does not mean that all of these costs will be passed through to Essential Water's customers. The key issue of what Essential Water's customers in and around Broken Hill can afford to pay will be considered separately as part of our review of Essential Water's prices in Broken Hill, as detailed in Box 1.1. We are conducting these two reviews concurrently so that all of these issues can be considered and consulted on at the same time.

Box 1.1 Review of Essential Water's prices in Broken Hill

We are currently reviewing Essential Water's prices for water and sewerage services in Broken Hill.[a] This Essential Water review will involve the following steps (listed in sequential order):

- Determine Essential Water's total efficient costs of providing services to its customers (including pipeline prices determined in this review).
- Determine what share of these costs should be **notionally** attributed to Essential Water's customers (including what share of the Pipeline's costs should be attributed to Essential Water's customers, applying our cost sharing principles and drawing on our assessment in this WaterNSW Pipeline review).
- Determine what share of these notional costs should be **actually** recovered from Essential Water's customers, taking into account what customers can afford to pay and other matters under section 15 of the IPART Act (see Appendix B).

a Our Issues Paper and Factsheet for the Essential Water review are available on our review page: https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Metro-Pricing/Prices-for-Essential-Energy%E2%80%99s-water-and-sewerage-services-in-Broken-Hill-from-1-July-2019

1.2 WaterNSW's pricing proposal

We are undertaking this review under a 'propose-respond' approach, which involves WaterNSW submitting a pricing proposal which we then respond to and seek stakeholder feedback on through our Issues Paper, Public Hearing and Draft Report. We asked WaterNSW to submit a pricing proposal for the 2019 determination period, which we received

8 We are currently undertaking a review of rural water cost shares which is looking at our cost sharing principles and reviewing the cost share ratios we apply to WaterNSW's rural bulk water services and WAMC's water management services. More information on this review is available on our rural bulk water review page: https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Rural-Water/Rural-Water-Cost-Shares

on 30 June 2018. WaterNSW's pricing proposal (and a plain English summary of the pricing proposal) is available on our website.[9]

WaterNSW is proposing a Notional Revenue Requirement (NRR) of $123.4 million over the four years to 2022-23, or an average of $30.8 million per year. WaterNSW is proposing to recover this NRR through a relatively high fixed charge and relatively low variable charge. This price structure reflects the predominantly fixed cost structure of the Pipeline. WaterNSW proposes that we set prices for both Essential Water and a small number of offtake customers along the Pipeline.

We will consider WaterNSW's pricing proposal, along with stakeholder comments and our own analysis in making our pricing decisions. We will also engage an expert consultant to review, analyse and evaluate WaterNSW's proposed costs and to make recommendations on the prudent and efficient level of costs that should be reflected in the maximum prices we set.

1.3 What are the key decisions for this review?

We will consider a wide range of issues as part of this review, including the following key decisions:

- **Establishing the efficient costs of providing the regulated Pipeline transportation services.**
  - We generally set prices for regulated services to reflect the full efficient costs of providing these services. This promotes the efficient use and allocation of resources. Our approach to establishing efficient costs involves testing WaterNSW's proposed operating and capital expenditure for efficiency and prudence.
  - These costs include the efficient costs of WaterNSW complying with the Minister's directions to construct and operate the Pipeline[10], which we have been directed to include in prices under Section 16A of the IPART Act.[11]
- **Setting prices to recover the efficient costs of providing the regulated Pipeline transportation services to customers.**
  - This involves deciding how prices should be structured. It also involves deciding how costs should be allocated between Essential Water and the Pipeline's offtake customers. While the Pipeline is being built to supply water to Essential Water and the Broken Hill community, WaterNSW is proposing to supply a small number of offtake customers along the Pipeline's route. An important issue for this review is how offtake customers will be treated under our determination and how services to them will be priced.

As part of this review we will also apply our cost sharing framework to determine how the Pipeline's costs should be notionally shared between Essential Water's customers and the

9 Available at: https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Rural-Water/Prices-for-WaterNSW%E2%80%99s-Murray-River-to-Broken-Hill-Pipeline-services-from-1-July-2019

10 A copy of the Minister's directions to WaterNSW are included in Section C of the Appendix to this Report (refer to Figures C.1 and C.2).

11 A copy of the Minister's direction to us is included in Section C of the Appendix to this Report (refer to Figure C.3).

NSW Government (on behalf of the broader NSW community).[12] This will determine the notional customer share of Essential Water's total efficient costs in our concurrent review of Essential Water's prices. In our review of Essential Water's prices, we will then also consider what customers in and around Broken Hill can afford to pay, in determining the share of Essential Water's costs that they should actually pay.

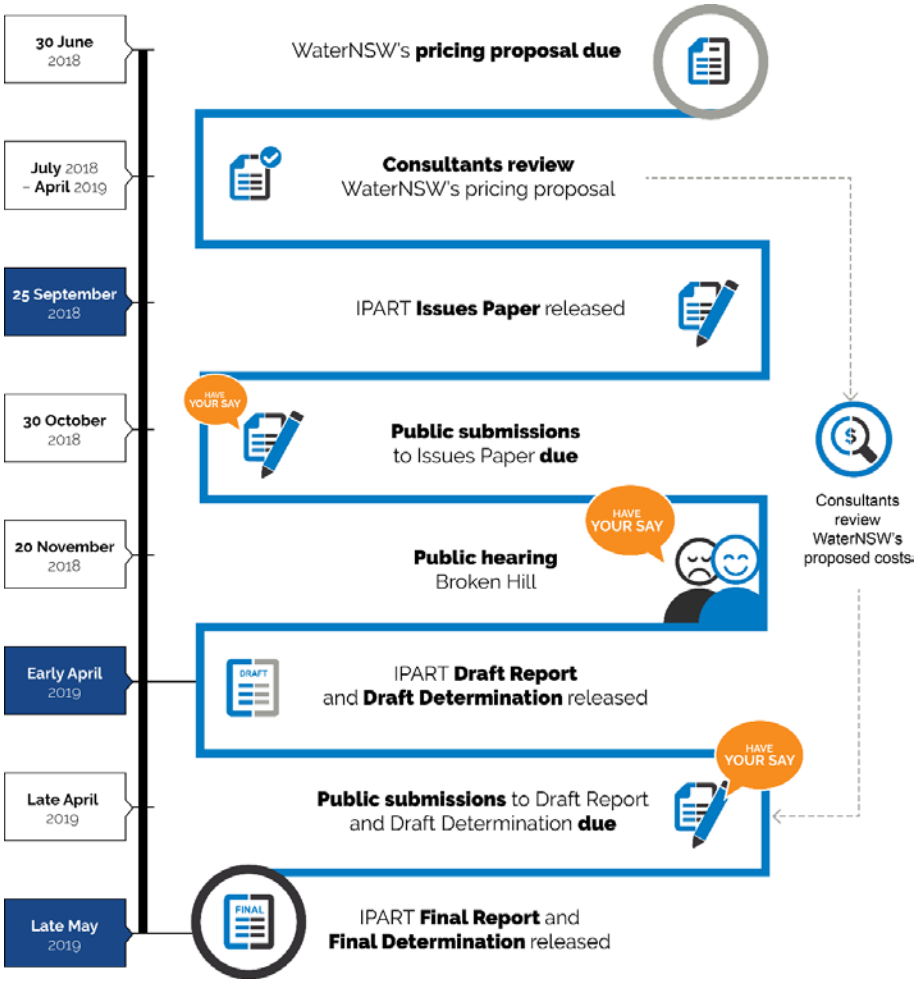
1.4 How will we undertake this review?

In setting maximum prices, we will consider the matters under section 15 of the *Independent Pricing and Regulatory Tribunal Act 1992* (the IPART Act), which are included at Appendix B. Section 15 of the IPART Act requires us to consider a broad range of issues including social, environmental and utility-specific matters. In addition, we will consider any other matters we consider relevant to this review.

There will be a number of opportunities for stakeholders to provide input to this review, including through written submissions to our Issues Paper, participation at the public hearing, and written submissions to our Draft Report. Below is an indicative timetable for the review outlining when there will be opportunities for stakeholders to make submissions to the review and to attend the public hearing in Broken Hill. We will consider all stakeholder comments before publishing our Final Report in May 2019. We may update our review timetable on our website, as the review progresses. Details on how to make submissions can be found on page iii of this Issues Paper.

12 We have developed a cost sharing framework that is underpinned by our application of the impactor pays principle, ie, the party that creates the need to incur the cost should pay the cost.

Figure 1.1 Indicative timetable for this review



Note: These dates are indicative and may change.

1.5 What is the structure of this Issues Paper?

The rest of this Issues Paper is structured as follows:

- Chapter 2 describes how the Pipeline review will feed into the Essential Water review and discusses the key decisions that will be made as part of the Pipeline review.
- Chapter 3 discusses the decisions we will make before setting prices, such as the length of the determination period, our approach to calculating the revenue requirement and the form of price regulation.
- Chapter 4 outlines Essential Water's proposed notional revenue requirement and our preliminary views on its proposal.
- Chapters 5, 6 and 7 discuss the individual components of the building block approach we use to calculate the notional revenue requirement.
- Chapter 8 discusses forecast water sales and customer numbers.
- Chapter 9 sets out WaterNSW's proposed prices for the Pipeline services and our preliminary views.

1.6 List of issues for stakeholder comment

The following chapters include questions that we seek stakeholder feedback on. For convenience, these questions are also listed below. Stakeholders are also welcome to comment or provide input on any other issues they consider relevant to our review.

2 Murray River to Broken Hill Pipeline Review

The price of water and sewerage services to customers in the Broken Hill region is affected by three IPART reviews and determinations (see Figure 2.1). This Issues Paper relates to the review that will determine prices for the WaterNSW Murray River to Broken Hill Pipeline (the Pipeline). That is, this review will determine the prices that WaterNSW can charge for the *transportation* of water through the Pipeline.[13] The two other (separate) IPART reviews set prices for the water that will be transported through the pipeline (ie, the prices for 'bulk' water)[14] and the prices that Essential Water's customers in Broken Hill will be charged for water and sewerage services.[15] The issue of what customers can afford to pay for water and sewerage services in Broken Hill will be considered as part of our review of Essential Water's prices in Broken Hill.

The interaction between this review and the review of prices for customers in Broken Hill is detailed in Figure 2.2. In this review we will consider what the efficient costs of providing the regulated Pipeline transportation services are and how these efficient costs should be allocated between Essential Water and the Pipeline's offtake customers in the prices we set.

In this review we will also apply our cost sharing framework to determine how the Pipeline's costs should be notionally shared between Essential Water's customers and the NSW Government (on behalf of the broader NSW community). To the extent we determine there is a case for a Government cost share for the Pipeline in this review, the Government contribution to account for this will be reflected in the separate, but concurrent, Essential Water price determination.

In the Essential Water review we will consider the efficient costs of supplying water and sewerage services to Broken Hill (which include, but are not limited to, Essential Water's notional share of the efficient pipeline costs) and the proportion of these costs that Essential Water's customers should actually pay, considering what customers can afford to pay.

13 These prices recover the costs of the Pipeline. See Appendix A for Background on WaterNSW's Murray River to Broken Hill Pipeline.
14 The 2017 WaterNSW Rural Bulk Water Determination.
15 The 2019 Essential Water Determination.

Figure 2.1 Setting Broken Hill water prices in 2019

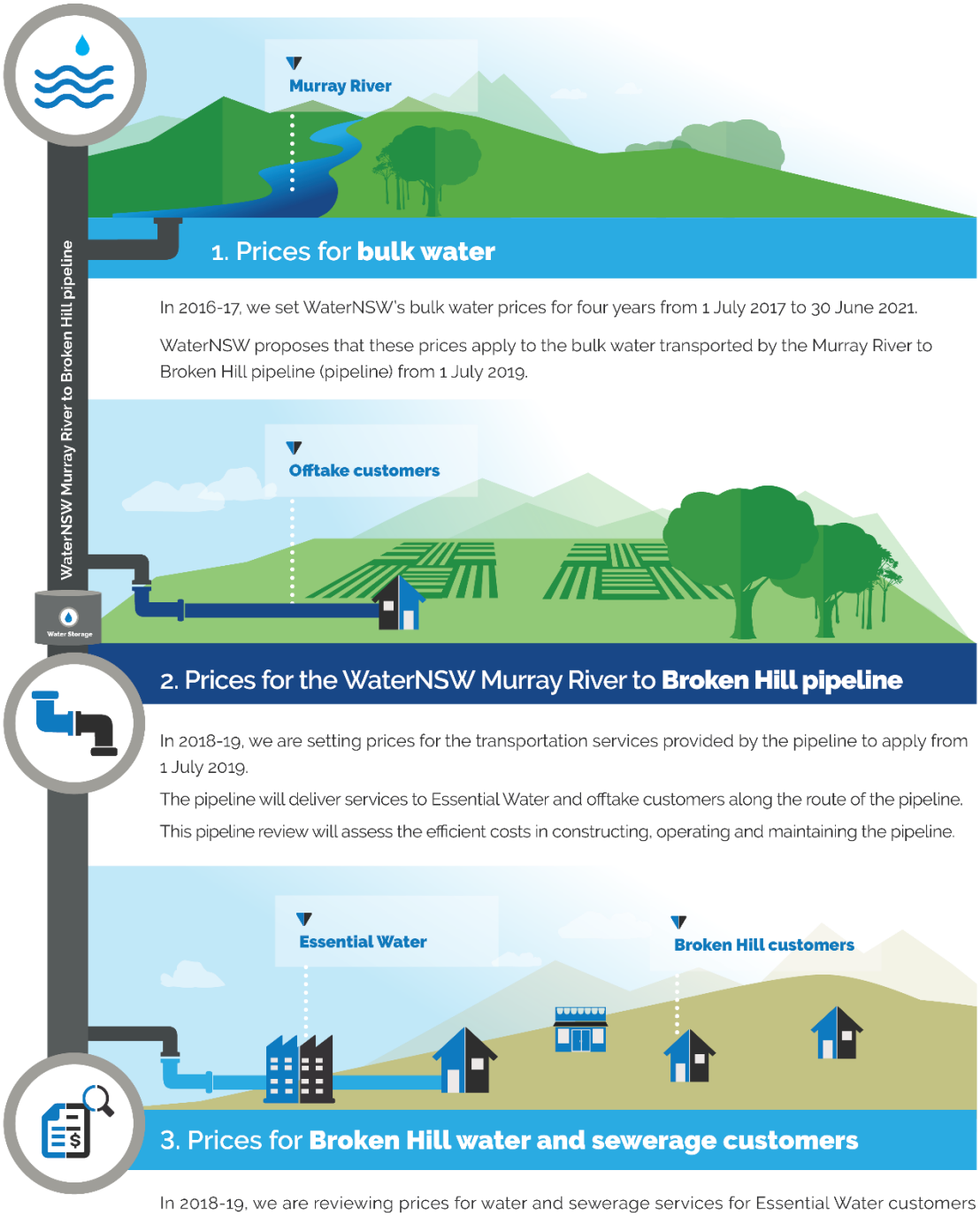
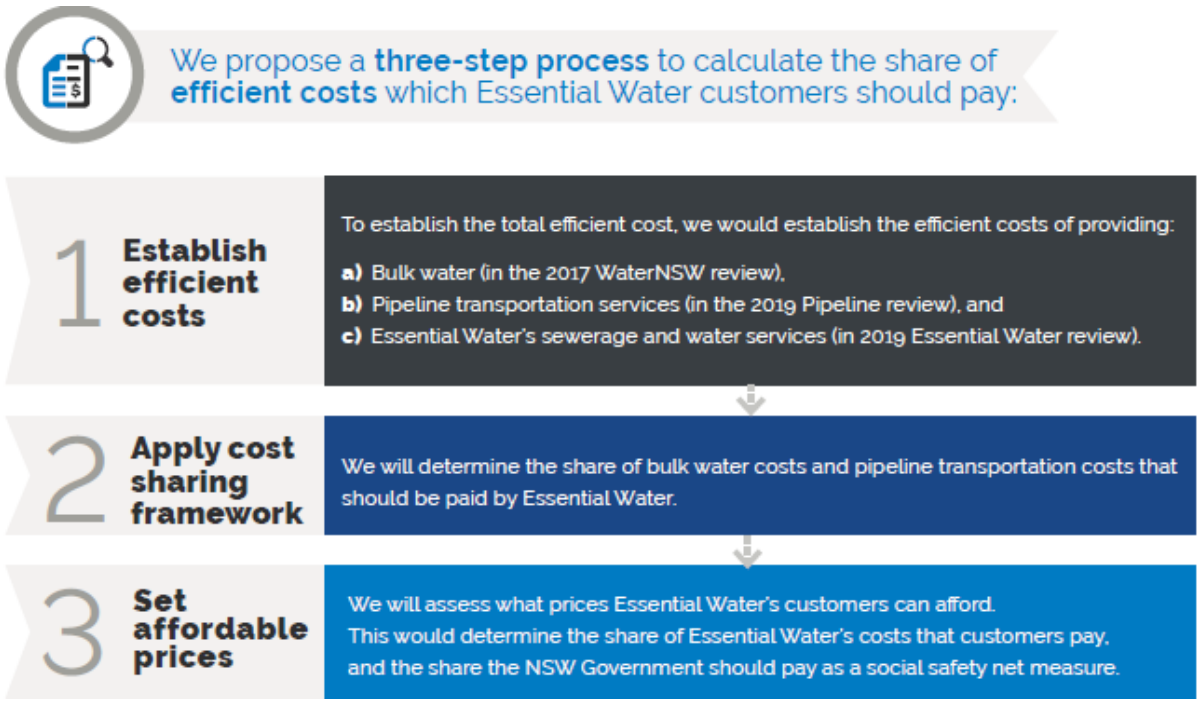


Figure 2.2 How the Pipeline review relates to the Essential Energy (Essential Water) review



2.1 Efficient costs of the Pipeline's transportation services

In 2016 and 2017 WaterNSW received directions from the NSW Government under section 20P of the *State Owned Corporations Act 1989* (SOC Act):

- **Direction to the Board of WaterNSW to secure the water supply of Broken Hill 2016**. This direction requires WaterNSW to construct, operate and maintain a pipeline from the Murray River to Broken Hill.[16]
- **Direction to the Board of WaterNSW in relation to the construction of the Broken Hill pipeline 2017**. This direction requires WaterNSW to comply with the minimum targets set in the NSW Infrastructure Skills Legacy Program (ISLP) as well as ensure Australian rolled steel is substantially used in the construction of the pipeline.[17]

The NSW Government also issued IPART a direction, under Section 16A of the IPART Act, to include the efficient costs of WaterNSW complying with the two section 20P directions in the

16 NSW Government, *Direction to the Board of WaterNSW to secure the water supply of Broken Hill 2016*, 21 November 2016. Available at: https://www.parliament.nsw.gov.au/la/papers/DBAssets/tabledpaper/webAttachments/70615/Direction%20under%20s%2020P%20of%20the%20State%20Owned%20Corporations%20Act.pdf, accessed on 24 August 2018.

17 NSW Government, *Direction to the Board of WaterNSW in relation to the construction of the Broken Hill pipeline 2017*, 31 August 2017. Available at: https://www.parliament.nsw.gov.au/la/papers/DBAssets/tabledpaper/webAttachments/71880/section%2020P%20direction%202017.pdf, accessed on 24 August 2018.

prices IPART determines for the transportation of water through the pipeline.[18] This means that IPART's role is to set prices to recover the efficient costs of meeting the policy decisions encapsulated in the section 20P directions, and not to re-evaluate those policy decisions.

These directions are provided in Appendix C of this Issues Paper.

2.1.1 Our approach to establishing efficient costs

In general, prices for regulated services should reflect the full efficient costs of providing these services to customers. This promotes the efficient use and allocation of resources, to the benefit of society. Setting prices above or below cost-reflective levels can encourage poor investment decisions by the provider of the service. It can also result in customers paying too much, or using too much, as they do not face the true costs of the service.

Our approach to establishing efficient costs involves testing a regulated business' proposed expenditure for efficiency and prudence. The 'efficiency test' is used to determine how much of the business's proposed expenditure (operating and capital) for the upcoming determination period should be included in its revenue requirement for the purpose of calculating prices. The efficiency test examines whether the business' proposed expenditure represents the best and most cost-effective way of delivering the regulated services.

The 'prudence test' assesses whether, in the circumstances existing at the time, the decision to invest in an asset is one that the business, acting prudently, would be expected to make. In assessing prudence, we generally assess both how the investment decision was made, and how the investment was executed (where the asset has been built). This means we look at the construction or delivery, and operation of the asset, taking into account information available at the time. In examining forecast expenditure, the prudence test examines the consistency of this expenditure with the business' longer-term capital expenditure program.

The prudence and efficiency tests are used to determine how much:

- actual capital expenditure in the current determination period, and
- forecast capital expenditure in the upcoming determination period

should be rolled into the regulatory asset base (RAB) for the purposes of calculating allowances for a return on and return of capital (as part of the business's revenue requirement), to be recovered from regulated prices.

The efficiency test is used to determine how much forecast operating expenditure should be included in the business's revenue requirement when determining regulated prices.

18 NSW Government, *Direction to IPART in relation to the construction and operation of the Broken Hill pipeline 2018*, 19 April 2018. Available at: https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/pricing-reviews-water-services-rural-water-prices-for-waternsw-murray-river-to-broken-hill-pipeline-services-from-1-july-2019/legislative-requirements-prices-for-waternsw-murray-river-to-broken-hill-pipeline-services-from-1-july-2019/section-16a-letter-and-direction-the-construction-and-operation-of-the-broken-hill-pipeline-2018-19-april-2018.pdf, accessed on 24 August 2018.

2.2 Allocating the efficient costs between Essential Water and the Pipeline's offtake customers in the prices we set

After we have established the efficient costs of providing the Pipeline's services, we need to consider how these costs are allocated between customers. While the Pipeline is being built to supply water to Essential Water and the Broken Hill community, WaterNSW also proposes to supply a small number of offtake customers along the Pipeline's route.

WaterNSW has proposed that the majority of the Pipeline's efficient costs be passed onto Essential Water while prices for offtake customers would be set to reflect the incremental costs of supply, as well as a small contribution to the fixed costs of the Pipeline (which would otherwise be recovered from Essential Water).[19] This reflects WaterNSW's view that serving offtake customers involves a lower cost to supply compared to Essential Water because WaterNSW will preference the delivery requirements of Essential Water over offtake customers. We will consider WaterNSW's proposal in the context of the appropriate price structures and levels for all customers. In particular, we will consider the appropriate contribution of Essential Water and offtake customers to the (fixed) capacity costs of the Pipeline.

Our standard form of regulation involves setting maximum prices for regulated services that apply to all customers for each year of the determination period. However, we support introducing pricing flexibility where it is likely to lead to more efficient prices and/or deliver value to customers. In our 2016 reviews of Sydney Water's and Hunter Water's prices, we decided to allow those businesses to enter into unregulated pricing agreements with large non-residential customers.[20]

Unregulated pricing agreements are optional and only entered into if both parties agree (ie, if the agreement benefits both parties).[21] The nature of the agreements between WaterNSW and offtake customers indicate that these are voluntary agreements entered into by two relatively sophisticated parties. We will consider the potential for agreements between WaterNSW and offtake customers to be treated as unregulated agreements within our price determination.[22]

2.3 Appropriate cost shares

In this review, we will also apply our cost sharing framework to determine how the Pipeline's costs should be notionally shared between Essential Water's customers and the NSW Government (on behalf of the broader NSW community). We have developed a cost sharing framework that is underpinned by our application of the impactor pays principle, ie, the party that creates the need to incur the cost should pay the cost.

19 The key factor underpinning the proposed prices for offtake customers is WaterNSW's consideration of the willingness to pay of potential offtake customers.

20 Under this approach we continue to set maximum prices for each of the business' monopoly services. However, if the business and a large non-residential customer enter into an unregulated pricing agreement, that customer would not be subject to our determined prices.

21 If the parties do not enter into an unregulated agreement then the determined prices will apply.

22 Unregulated pricing agreements are effectively an alternative to the regulated price. If an unregulated pricing agreement results in changes to the regulated business' costs or revenues, these should be ring fenced from the regulated business and should not impact regulated prices.

The notional share of the Pipeline's total efficient costs that we allocate to Essential Water's customers in this review will inform how much of the Pipeline's total costs should be passed on to Essential Water's customers in our concurrent review of Essential Water's prices. In the Essential Water review, we will also consider what customers in and around Broken Hill can afford to pay, in determining the share of Essential Water's costs that should actually be paid by customers.

2.3.1 Our cost sharing hierarchy

In most cases, the water services provided by a regulated business to its customers are largely private goods that benefit those who consume the service.[23] Customers are the impactors because they create the need for the service. Therefore, they should pay for these costs directly.

However, there is sometimes a case to share efficient costs between customers and other segments of the community, when costs are incurred to deliver outcomes to those other segments of the community.[24] For example, if the assets used to provide regulated water services are designed, and costs are incurred, to deliver other outcomes (such as flood management or recreation services) in addition to the core water services, it is appropriate for the government to contribute to the costs on behalf of the broader community.

Under our cost sharing framework, we consider that using the impactor pays principle is most consistent with cost-reflective pricing, because it is more efficient for costs to be allocated to those who create the need to incur these costs.[25] If we are not able to identify a clear set of impactors who have created the need for these costs, we would adopt a beneficiary pays approach. Under the beneficiary pays approach, the costs of a service or activity would be allocated to those who benefit from the service or activity.

Our preference for the impactor pays principle is consistent with our approach across a range of services, where we have generally adopted the following hierarchy:

1. Preferably, the party that created the need to incur the cost (the impactor) should pay in the first instance.
2. If that is not possible, the party that benefits (the beneficiary) should pay. Further, it is preferable for direct beneficiaries to pay, but if that is not possible then indirect beneficiaries should pay.
3. In cases where it is not feasible to charge either impactors or beneficiaries (for example, because of social welfare policy, public goods, externalities, or an administrative or legislative impracticality of charging), the government (taxpayers) should pay.[26]

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23 In economics, private goods are goods or services that are excludable (those who have not paid for it cannot use it) and rivalrous (use by one party necessarily prevents use by another party).

24 We have adopted this approach in sharing costs between rural water customers and the NSW Government (on behalf of the broader community) when determining prices for WaterNSW's rural bulk water services and the Water Administration Ministerial Corporation's (WAMC's) monopoly water services.

25 Allocating costs in this way can promote economically efficient outcomes over time, because the impactor would only choose to consume the service if the benefit they receive exceeds the costs that arise from providing the service.

26 For example, we recommended the adoption of this funding hierarchy in our review of the funding framework for Local Land Services in NSW. For further information, see IPART, *Review of funding framework for Local Land Services NSW – Draft Report*, 2013.

2.3.2 Application to the Broken Hill Pipeline

Applying our cost sharing framework to the Pipeline will help us identify what share of the Pipeline's efficient costs should be notionally borne by customers and what share should be borne by other parties (eg, the NSW Government on behalf of the broader community). In applying our cost sharing framework we will take a number of matters into account. This will include identifying who is causing the need for the Pipeline (ie, the 'impactors'), who will likely benefit from the Pipeline (ie, the 'beneficiaries'), and whether it is practical to recover costs from these impactors and beneficiaries.

We will consider the key reasons driving the need for the Pipeline including providing water security to Broken Hill and surrounding communities. From an 'impactor pays' perspective, this would suggest Broken Hill and surrounding communities should contribute to the cost of the Pipeline. We also recognise the Pipeline may facilitate a reduction in the evaporative loss of water from the Menindee Lakes system and those reduced losses could generate water supply for other parts of the Murray Darling Basin (ie, provide benefits beyond Broken Hill). From a 'beneficiary pays' perspective, this would suggest the NSW Government on behalf of the broader community should contribute to the cost of the Pipeline.

We are seeking stakeholder feedback on how the efficient costs of the Pipeline should be notionally allocated between Essential Water's customers and the NSW Government on behalf of the broader community.

We will consider the key issue of what Essential Water's customers in and around Broken Hill can afford to pay, to then determine the share of Essential Water's costs that should actually be paid by customers, as part of our review of Essential Water's prices in Broken Hill.

IPART seeks comments on the following

1 What matters should we take into account when considering the appropriate notional sharing of the efficient costs of the Pipeline?

2.4 Other key decisions

In setting prices we will also make decisions on:

- the length of time for which we set prices (the determination period)
- the methodology we will use to set WaterNSW's efficient costs and revenue requirement
- the methods we will use to regulate prices, including whether prices are directly or indirectly controlled (the 'form of regulation')
- forecast water sales and customer numbers, and
- the appropriate structure and level of prices for the Pipeline, given the revenue requirement (discussed above) and expected water sales and customer numbers.

We will assess the impacts the Pipeline prices will have on WaterNSW, Essential Water and its customers, offtake customers and any other relevant stakeholders. We will also engage expert consultants to assist us in reviewing WaterNSW's operating and capital expenditure proposals. In making price determinations, we are required under section 15 of the IPART

Act to have regard to a range of matters, such as the costs of providing the service concerned, what customers can afford to pay and environmental impacts. These matters are set out in Appendix B of this Issues Paper.

3 Decisions we will make before setting prices

This chapter considers a range of decisions we will make before setting prices. It discusses, in turn, WaterNSW's proposal and our preliminary views on:

- the length of the determination period
- the approach we use to establish the revenue WaterNSW requires to deliver services via the WaterNSW Murray River to Broken Hill Pipeline (the Pipeline) efficiently, and
- the form of regulation, or method, we use to set prices.

3.1 How long should we set prices for?

An early step in a price determination is to determine the length of the price path. In general, the determination period can have a duration of between one and five years, depending on the circumstances. In recent years we have favoured 4-year determinations as we considered that a 4-year price path struck an appropriate balance between providing certainty to the regulated business and limiting delays in customers benefitting from efficiency gains.

We consider a number of factors when deciding on the length of the determination period as set out in Box 3.1.

Box 3.1 Deciding on the length of determination

In general, the factors we consider when deciding the length of a determination period are:

- the confidence we have in the regulated business's forecasts
- the risk of structural changes in the industry
- the need for price flexibility and incentives to increase efficiency
- the need for regulatory certainty and financial stability
- the timing of other relevant reviews, and
- stakeholder views.

Longer determination periods have several advantages over shorter periods. For example, a longer period: provides greater stability and predictability (which may lower a regulated business' business risk and assist investment decision making); creates strong incentives for a regulated business to increase efficiency; and reduces regulatory costs.

However, longer determination periods also have disadvantages. These include: increased risk associated with using inaccurate data to set prices; possible delays in customers benefitting from any efficiency gains; and the risk that changes in the industry will impact the effectiveness of the determination.

WaterNSW has proposed a 4-year determination period from 2019-20 to 2022-23. This mirrors the proposal from Essential Water for a 4-year period and would (potentially) align the two

determination periods. In addition, WaterNSW considers that a 4-year period is better for managing the risk associated with energy costs than a longer period would be.[27]

IPART's response

We typically adopt a four or five year determination for water pricing. Our preliminary view is that WaterNSW's proposal of four years is reasonable, however we are interested in whether stakeholders agree with this view or if stakeholders consider that there is merit in a different determination period.

IPART seeks comments on the following

2 How long should we set prices for in the 2019 Determination?

3.1 Our building block approach to determining the revenue requirement

We propose to use our standard 'building block' method to calculate WaterNSW's notional revenue requirement (NRR) over the determination period. The NRR represents our view of the total efficient costs of providing the Pipeline's services.

In general, we set prices to recover this amount of revenue. The building block costs of service provision include:

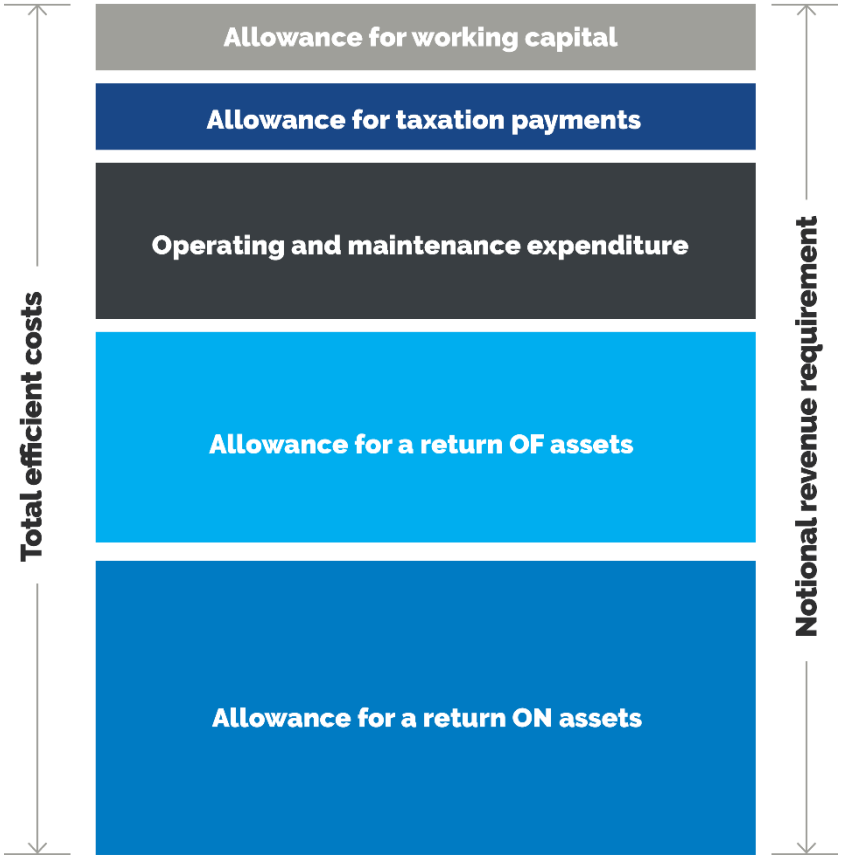
- **Operating expenditure**, which represents our estimate of WaterNSW's forecast efficient operating, maintenance and administration costs.
- A **return *on* the assets** used to provide the services, which provides a return on investment in those assets. This is our assessment of the opportunity cost of the capital invested in WaterNSW by its owner,[28] and ensures WaterNSW can continue to make efficient investments in capital.
- A **return *of* the assets** used to provide the regulated services, which is known as regulatory depreciation. This allowance lets WaterNSW recover the investment in the assets used to provide the services (over the economic life of those assets) and recognises that capital infrastructure wears out over time.
- Meeting **tax obligations**, which reflects the forecast tax liability for a comparable commercial business operating in a competitive market.
- **Working capital**, which represents the holding cost of net current assets and allows WaterNSW to meet its cash flow requirements.

The sum of these allowances is also called the NRR (see Figure 3.1).

27 WaterNSW also considers that a 4-year cycle would assist it in managing the resources required to participate in the four IPART determinations that impact its prices. See WaterNSW pricing proposal to IPART, June 2018, p 45.

28 The opportunity cost of using capital for one purpose is the expected revenue forgone from investing that capital in its best alternative use.

Figure 3.1 Building block approach to calculating efficient costs and notional revenue requirement (NRR)



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

IPART seeks comments on the following

3 Do stakeholders support our use of a 'building block' approach to calculate WaterNSW's efficient costs and the revenue requirement for the pipeline? If not, what alternative method would be appropriate?

3.2 Form of regulation

Form of regulation refers to the approach to setting or controlling prices for monopoly services. This can determine how much discretion the regulated business has to adjust its prices within a determination period, how and how frequently the regulator reviews or adjusts prices, and how risks and rewards are shared between the regulated business and its customers.[29] The form of regulation can affect the incentives faced by the regulated business.

These are several different forms of price control. They can provide different incentives to the regulated entity, and different distributions of risk between the regulated entity and its customers. Some of the most common forms are summarised in Box 3.2.

29 ACCC, *Draft Decision on State Water Pricing Application: 2014-15 – 2016-17*, March 2014, pp 17-18.

Box 3.2 Different forms of price controls

The different forms of price control include the following:

- **Price cap** – maximum prices are determined at the start of the determination period and adjusted each year for inflation. This approach provides predictable prices for customers, but the regulated entity bears volume-related risk to the extent that price structures do not perfectly match the utility's cost structures. (The utility will not face volume-related risk if its fixed price is set to recover its fixed costs, and its usage price is set to recover its variable or marginal costs).
- **Revenue cap** – a regulated entity receives its total revenue allowance for a regulatory period, irrespective of the volume of regulated services provided. Customers bear any volume-related risk through price increases or decreases over the regulatory period.
- **Weighted average price cap** – a maximum average price is set for each group of the utility's prices for the first year of the determination. A formula can also be determined for adjusting this average price in each subsequent year of the regulatory period. The regulator can also set limitations on the amount by which some or all individual prices within the groups can increase during the determination. Utilities then have the freedom to rebalance prices (increase or decrease individual prices), so long as the weighted average of the prices is less than or equal to the maximum average price, and they comply with any limitations imposed. The accuracy of volume forecasts will significantly affect the overall revenue that the utility is able to earn while keeping within the weighted average price cap.[a]
- **Hybrid** of the revenue and price cap controls – a price control is in place but additional measures to mitigate the risk of the utility under or over-recovering its revenue requirement are also used.

a IPART, *Form of Economic Regulation for NSW Electricity Network Charges*, Discussion Paper, August 2001, pp 5-6.

WaterNSW is proposing price caps for the WaterNSW Murray to Broken Hill Pipeline services. WaterNSW's proposed fixed charges would recover its fixed costs, while its proposed usage prices would recover its variable costs (so there would be limited volume-related risk for WaterNSW).

IPART's response

The use of price caps is our standard approach to regulating water prices and our preliminary view is that WaterNSW's proposal is reasonable. However, we are open to considering other approaches if stakeholders make a case for an alternative approach (eg, a revenue cap) and we are seeking stakeholder feedback on the form of regulation that is appropriate for WaterNSW.

4 Notional Revenue Requirement

This chapter summarises the Notional Revenue Requirement (NRR) that WaterNSW has proposed to recover for the WaterNSW Murray River to Broken Hill Pipeline (the Pipeline) through customer prices. The purpose of this Chapter is to provide context for the following chapters, which cover each element of WaterNSW's proposed NRR. Chapters 5, 6 and 7 present and seek stakeholder feedback on the components of WaterNSW's proposed NRR.

4.1 WaterNSW's proposed Notional Revenue Requirement

Table 4.1 sets out WaterNSW's proposed NRR for the Pipeline of $123.4 million over the 4-year determination period, or an average of $30.8 million per annum.

Table 4.1 WaterNSW's proposed NRR ($'000, $2018-19)

	2019-20	2020-21	2021-22	2022-23	Total	Average
Operating and maintenance	5,229.0	5,101.1	4,806.5	5,006.5	20,143.1	5,035.8
Return of capital (depreciation)	5,600.4	5,600.4	5,600.4	5,600.7	22,401.8	5,600.4
Return on capital	19,275.8	19,045.5	18,804.7	18,565.0	75,690.9	18,922.7
Working Capital Allowance	136.4	143.1	141.5	140.6	561.6	140.4
Tax allowance	1,087.1	1,115.8	1,140.8	1,165.0	4,508.7	1,127.2
Annuity for offtakes[a]	14.6	14.6	14.6	14.6	58.5	14.6
Total costs	31,343.2	31,020.5	30,508.4	30,492.4	123,364.5	30,841.1

a WaterNSW has added a component to our standard regulatory building blocks – a forecast of annuity payments from offtake customers. The annuity is calculated to recover the incremental capital expenditure required for an offtake ($89,000) over 20 years based on a WACC of 4.3%. In line with WaterNSW's pricing proposal, the annuity has been applied to two offtake outlets.

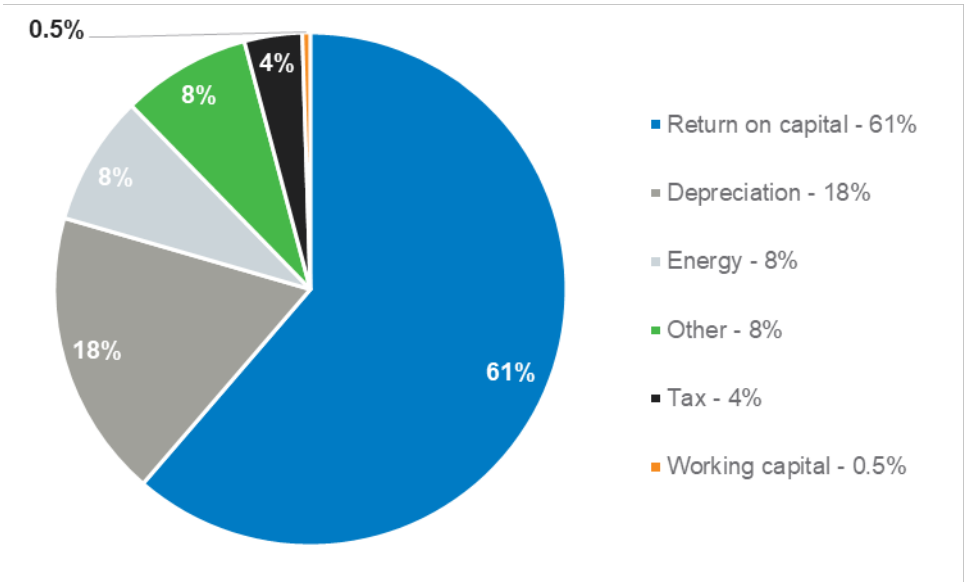
Source: WaterNSW pricing proposal to IPART, June 2018, p 49.

4.2 Analysis of WaterNSW's proposed Notional Revenue Requirement

WaterNSW's proposed NRR declines by 2.7 percent over the proposed 4-year 2019 determation period. This reflects decreases in operating and maintenance costs and return on capital (because the RAB is depreciating), which is partially offset by an increase in the tax allowance over the period.

Figure 4.1 illustrates the major components of WaterNSW's proposed NRR.

Figure 4.1 WaterNSW proposed average annual NRR



Data source: WaterNSW pricing proposal to IPART, June 2018, p 49.

Figure 4.1 shows that capital costs (return on, return of and working capital) make up almost 80% of WaterNSW's proposed NRR. This reflects the capital intensive nature of the Pipeline. Of the remaining 20% of WaterNSW's proposed NRR:

- energy costs make up about 8%
- other operating and maintenance costs make up about 8%, and
- the tax allowance makes up the remaining 4%.

5 Allowance for operating expenditure

As Chapter 4 discussed, the allowance for operating expenditure within the notional revenue requirement (NRR) reflects our view of the efficient level of operating costs of the WaterNSW Murray River to Broken Hill Pipeline (the Pipeline) over the 4-year period to 2022-23. These costs are predominantly comprised of energy costs associated with propelling water up the Pipeline, fixed operation and maintenance costs and additional corporate overhead costs.

This chapter discusses WaterNSW's proposed operating expenditure for the Pipeline over the determination period and our preliminary response to this proposal, including our proposed approach for establishing the prudent and efficient level of operating expenditure.

5.1 WaterNSW's proposed operating expenditure of the Pipeline

WaterNSW has proposed operating expenditure of around $20 million over the 4-year period to 2022-23, as detailed in the following table.

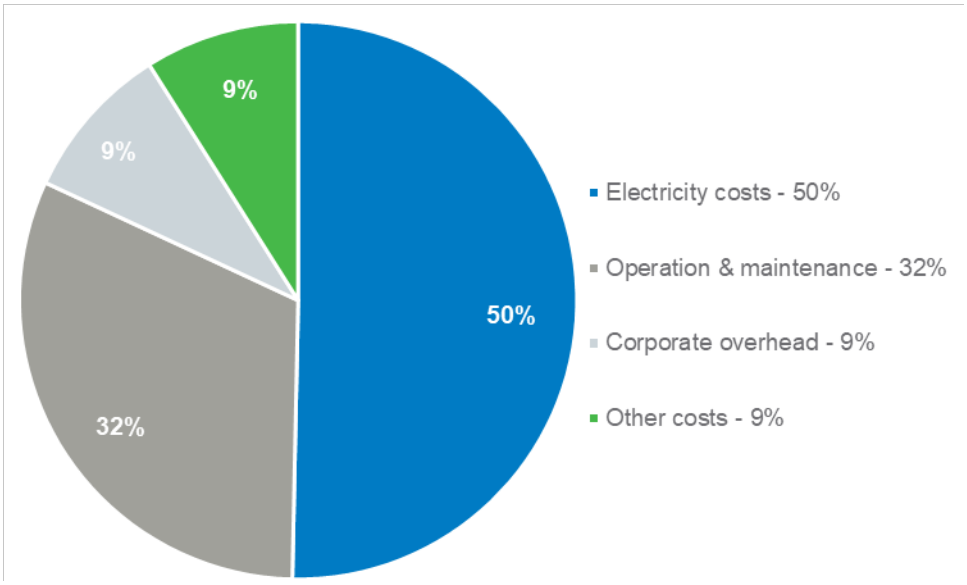
Table 5.1 WaterNSW's proposed operating expenditure of the Pipeline for the 4-year period to 2022-23 ($'000, $2018-19)

	2019-20	2020-21	2021-22	2022-23	Total
Total Operating Expenditure	5,229	5,101	4,807	5,007	20,143

Source: WaterNSW pricing proposal to IPART, June 2018, p 73.

About half of WaterNSW's proposed annual operating expenditure is the cost of electricity for the pumps to propel the water up the pipeline. Figure 5.1 shows the components of its proposed operating expenditure, averaged over the 4-year period to 2022-23.

Figure 5.1 Components of WaterNSW's proposed annual operating expenditure over the 4-year period to 2022-23



Source: WaterNSW pricing proposal to IPART, June 2018, p 73.

The other major components of operating expenditure for WaterNSW are:

- Operation and maintenance costs, including a fixed monthly charge under the operation and maintenance (O&M) contract.
- Corporate overheads, which comprise costs of shared services and management of the special purpose vehicle (SPV). The SPV will be a wholly owned proprietary company limited by shares under the *Corporations Act 2001* (Cth) to construct, operate and maintain the pipeline and has been formed to ring-fence costs and responsibility for the Pipeline.
- Other costs, which comprise a nominal amount for planned asset replacement and SPV contract management and audit costs.

5.1.1 Proposed operating expenditure: electricity costs

Electricity costs are the largest component of the Pipeline's operating expenditure, and will largely derive from three pump stations propelling water up the Pipeline. The operating schedule of the Pipeline is designed to optimise off-peak and shoulder pumping times to minimise on-peak operation.

The major components in calculating the cost of electricity of the Pipeline include the energy use profile of the pumps at different levels of demand, expected demand and electricity prices. The actual electricity cost of the pipeline is expected to include:

- network charges
- retail supply charges
- environmental charges
- metering charges

- ancillary charges
- participant charges, and
- other charges (e.g. prudential charges).

Table 5.2 details the forecast electricity costs of the Pipeline over the 4-year period to 2022-23.

Table 5.2 Electricity costs of the Pipeline ($'000, $2018-19)

	2019-20	2020-21	2021-22	2022-23	Total
Electricity costs	2,706	2,588	2,331	2,515	10,140

Source: WaterNSW pricing proposal to IPART, June 2018, p 76.

The forecast electricity costs proposed by WaterNSW have been calculated based on:

- average demand of 5,746MLs per annum (which is discussed in Chapter 8 of this Issues Paper)
- actual retail electricity rates to 2020-21
- benchmark network rates and other tariffs for the 4-year period to 2022-23, and
- benchmark (forecast) retail electricity rates from 2021-22 to 2022-23.

WaterNSW engaged ACIL Allen to prepare an energy price benchmark for this review. The Operating and Maintenance (O&M) contractor has entered into a power supply agreement (PSA) covering the first two years of the determination period, 2019-20 and 2020-21. WaterNSW considers that it would not have been prudent for the O&M contractor to enter a PSA for more than two years due to uncertainty in the out years. Electricity prices for the remaining years of the 4-year period to 2022-23 will be sourced under a subsequent tender process, expected to be held before the end of the current PSA.

WaterNSW is proposing that we set prices based on:

- passing through PSA prices for 2019-20 and 2020-21
- benchmark prices (as a placeholder) for 2021-22 and 2022-23, and
- allowing 2021-22 and 2022-23 prices to be automatically updated during the determination to reflect future PSAs entered into by the O&M contractor.

5.1.2 Proposed operating expenditure: other costs

The major components of proposed operating expenditure, other than electricity, are detailed in Table 5.3 and include:

- **Operation and maintenance:** a fixed (monthly) rate charge under the O&M contract to perform all the operations and maintenance of the pipeline over the 20-year term. This includes staffing costs at the pipeline, which is based on 3.6 full time equivalent staff.
- **Asset replacement costs:** a minor amount of operating expenditure which covers planned asset replacement incorporated into the O&M contract.

- **Corporate overhead:** a 10% overhead rate applied to total operating expenditure (excluding the overhead component).
- **SPV – other expenses:** other operational expenses incurred by the SPV in the running of the Pipeline, including contract management, financial governance and audit and insurance.

Table 5.3 Operating expenditure, by category ($'000)

	2019-20	2020-21	2021-22	2022-23	Total
Operation and maintenance	1,596	1,597	1,587	1,585	6,365
Asset replacement	0.3	1.1	0.3	0.0	1.7
Corporate overhead	475	464	437	455	1,831
SPV – other expenses:					
▼ SPV audit costs	100	100	100	100	400
▼ SPV contract	220	220	220	220	880
▼ Insurance & land tax	132	132	132	132	526

Note: Operating expenditure, excluding electricity costs which are detailed under 4.1.1.
Source: WaterNSW pricing proposal to IPART, June 2018, pp 73-84.

5.2 IPART's response to WaterNSW's proposed operating expenditure

We have not formed a preliminary view on WaterNSW's proposed operating expenditure. To make our draft decision, we will review the efficiency of the proposed operating expenditure (see Box 5.1). This will involve examining whether this expenditure represents the best way of operating the Pipeline, given the directions to WaterNSW from the Government (see section 2.1). We will also consider the responses of WaterNSW and other stakeholders to this Issues Paper.

To assist us in determining the allowance for operating expenditure, we will engage a consultant to review WaterNSW's forecast operating expenditure over the 4-year period to 2022-23. The consultant will review and provide recommendations on the efficient level of:

- energy costs of the pipeline (including the efficient volume of energy)
- operation and maintenance costs
- corporate overhead, and
- SPV costs and other expenses.

Box 5.1 Prudence and Efficiency test

Prudence test

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

Efficiency test

In reviewing expenditure, the efficiency test examines whether WaterNSW's expenditure represents the most cost effective way of delivering the monopoly services. The efficient level of proposed expenditure by WaterNSW's is used to determine the allowance for operating expenditure within the notional revenue requirement for the 4-year period to 2022-23.

5.2.1 Response on electricity costs

Energy costs are expected to make up a substantial proportion of the Pipeline's operating costs. In this review, we will engage consultants to estimate the market-based benchmark prices and efficient benchmark volume of energy. We will use this as an input into setting the energy cost allowances.

We will consider whether to use WaterNSW's contracted energy price or benchmark estimates of efficient energy prices. In some instances, adopted benchmark estimates is an appropriate approach because it:

- de-links prices and actual costs, such that the business is provided with incentives to manage its cost efficiently, and
- is consistent with outcomes expected in a competitive market.

We will ask our energy consultant to advise us on the efficient energy costs of the Pipeline, including an assessment of how these relate to WaterNSW's proposed energy costs. We will also ask our expenditure review consultant to review the efficient volume of energy for the Pipeline over the determination period.

The operating and maintenance contract includes an efficiency sharing mechanism between WaterNSW and the operator for the energy requirements of the Pipeline.[30] WaterNSW proposes passing its 50% share of any energy saving onto Essential Water as a rebate in the year after the saving is realised. We intend to consider this in the context of the Efficiency Carryover Mechanism (ECM) that IPART has included in recent water price reviews. We would also consider how any savings could be passed through to Essential Water.

Cost past-through mechanism – should it be applied to operation of the Pipeline?

Generally, we set efficient operating and capital expenditure allowances for the determination period with an expectation that costs can fluctuate up and down, some new costs will arise,

30 An efficiency sharing mechanism provides an incentive for both parties to share in efficiency gains or losses.

and some expected costs will not occur. If there is no bias in the forecasts, we would expect the gains from underspends to offset the losses from overspends over the long term.

There are some exceptions to this. Where there is a significant cost that may occur during the regulatory period, and if the business can have no meaningful influence over whether the cost is incurred or how big the cost will be, there can be a case to provide a cost pass-through for these costs. Cost past-through mechanisms allow the efficient costs of uncertain and uncontrollable events that arise during the regulatory period to be passed through to customers within the regulatory period.

We consider that cost pass-through mechanisms should only be applied in exceptional circumstances, as detailed in Box 5.2. We will apply these criteria to WaterNSW's proposal for an energy cost pass-through for the 2019 Determination, subject to consideration of stakeholder views.

Box 5.2 Criteria for cost pass-through mechanism

Cost pass-through mechanisms should only be applied in situations where:

- There is a trigger event (to activate the cost pass-through), which can be clearly defined and identified in the price determination.
- The resulting efficient cost associated with the trigger event can be fully assessed including whether there are other factors that fully or partially offset the direct cost of the event.[a]
- The resulting cost is assessed to exceed a materiality threshold.
- The regulated business cannot influence the likelihood of the trigger event or the resulting cost.
- The mechanism is symmetric in that it applies equally to both cost increases and cost decreases (in cases where the risk can result in both cost increases and cost decreases).
- It is clear that the cost pass-through will result in prices that better reflect the efficient cost of service.

[a] The costs to be passed through must be specified in the price determination.

IPART seeks comments on the following

4 Do WaterNSW's proposed energy costs for the 4-year period to 2022-23 represent prudent and efficient energy costs?

5 How could an efficiency carryover mechanism apply to any savings generated by the Pipeline contractor?

6 Is there a case to manage WaterNSW's proposed energy costs through a cost pass-through mechanism?

5.2.2 Response on other operating costs

We also propose asking our energy expenditure consultant to advise us on the other operating expenditure incurred in running the Pipeline, including a review of the:

- operation & maintenance costs agreed in the O&M contract with WaterNSW

- corporate overhead costs, including WaterNSW's 'rule of thumb' approach which calculate overheads as 10% of the Pipeline's total operating expenses (excluding overheads), and
- statutory requirements of a SPV and estimated costs attributable to financial governance, contractual management and audit activities.

IPART seeks comments on the following

7 Is WaterNSW's proposed expenditure on operation and maintenance of the Pipeline, under its operating and maintenance (O&M) contract terms, efficient?

8 Is WaterNSW's proposed expenditure on corporate overheads to operate the Pipeline efficient?

9 Is WaterNSW's proposed expenditure on special purpose vehicle (SPV) contract and audit costs to fulfil the statutory requirements efficient?

10 Are there other considerations we should take into account when determining the prudent and efficient costs of operating the Pipeline?

6 Prudent and efficient capital expenditure

Under the building block approach, there is no explicit allowance for capital expenditure in the notional revenue requirement (NRR). Instead, capital expenditure is included in the Regulatory Asset Base (RAB) and recovered through the allowances for a return on assets and return of assets or regulatory depreciation (return on and of assets is discussed in Chapter 7).

To decide how much capital expenditure goes into the RAB, we will review WaterNSW's proposal and apply:

- a prudence test to its actual capital expenditure in the pre-commissioning stage of the Pipeline, and
- an efficiency test to its proposed capital expenditure in the post-commissioning stage of the Pipeline (forecast capital expenditure).

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

The efficiency test examines whether the proposed capital expenditure represents (over the life of the asset) the best way of meeting customers' needs, subject to the utility's regulatory requirements. We incorporate the prudent and efficient capital expenditure into the value of the RAB, and then use this value in calculating the allowances for a return on assets and regulatory depreciation. Our proposed approach is discussed in the following Chapter.

Our assessment of the prudence and efficiency test will take into account the NSW Government directions which relate to this review (this is discussed in Chapter 2). This will involve assessing the decisions taken by WaterNSW during the pre-commissioning of the Pipeline including the scoping, tender, optimisation modelling and construction stages of the Pipeline, and evaluating their relationship with the directions.

This chapter outlines WaterNSW's proposal on capital expenditure for the construction of the Pipeline including forecast capital expenditure, our preliminary response and questions we seek stakeholder feedback on.

6.1 WaterNSW's proposed capital expenditure for the Pipeline

6.1.1 Overview of the procurement process of the Pipeline

WaterNSW undertook an expression of interest (EOI) followed by a request for tender (RFT) process in the procurement of the construction of the Pipeline. Ten EOI submissions were received on 28 April 2017 and were evaluated. The four proponents with the highest evaluation scores were shortlisted to take part in the RFT stage.

Design of the RFT

Through the RFT, WaterNSW structured the delivery of the construction and maintenance for the first 20 years of the Pipeline as a design, build, operate and maintain model. The contract tender was designed such that the design and construct (D&C) and operation and maintenance (O&M) contracts were awarded to one vendor.

The RFT required tenderers to complete a detailed pricing pro-forma including:

- A breakdown of the D&C cost of the project into pre-defined components.
- Details of D&C components purchased in a foreign currency and the exchange rates.
- A detailed breakdown of all items comprising the O&M cost and the flexibility to adjust operating scenarios (e.g. water demand) to test the impact of the scenarios on cost.
- A detailed breakdown of asset replacement costs to be incurred over the life of the project.

RFT process

On 8 June 2017, WaterNSW issued the RFT to the four shortlisted tenderers. The tender closed on 29 August 2017. A schedule of the tender process is detailed in the below table.

Table 6.1 The Pipeline RFT schedule

Milestone	Indicative date
Release of RFT	8 June 2017
Briefing meeting	16 June 2017
Site inspections	22-23 June 2017
Interactive workshops	26 June – 17 August 2017
Interim Tenderer submission of Project Documents departures	24 July 2017
WaterNSW reissue of Project Documents	4 August 2017
Closing date for Tenders	29 August 2017

Source: WaterNSW pricing proposal to IPART, June 2018, p 17.

Tender evaluation

The four shortlisted tenderers arising from the EOI process each submitted a conforming and complete tender. The WaterNSW evaluation committee conducted a detailed review of the tenders. The evaluation weightings of the tender evaluation process is detailed in Table 6.2.

Table 6.2 The Pipeline RFT – tender evaluation criteria

Evaluation Criteria	Weighting
Design	15%
Delivery	10%
Operations	10%
Commercial Solution	5%
Financial Capacity	Pass / Fail
Prices	60%

Source: WaterNSW pricing proposal to IPART, June 2018, p 17.

The two highest scoring tenderers were shortlisted and all the tenderers were notified of this on 21 September 2017. Upon shortlisting, the two highest scoring tenderers were requested to engage in face-to-face meetings on 22 September 2017. The evaluation committee proceeded to actively negotiate with both shortlisted tenderers. On 12 October 2017, WaterNSW provided separate revised final drafts of the D&C contract, O&M contract and output specification to the shortlisted tenderers. All contract departures were provided to WaterNSW by 16 October 2017 and the evaluation committee then revised the evaluation scores. The preferred contractor based on the scores was the John Holland MPC Group Joint Venture for the D&C contract and the John Holland Trility Joint Venture for the O&M contract. WaterNSW announced the appointments on 23 October 2017.

6.1.2 The Pipeline Design

The John Holland MPC Group Joint Venture proposed a design solution in response to the design requirements in the RFT.

The major design features of the Pipeline that were included in the RFT were:

- a screened river offtake from the Murray River near Wentworth
- a pump station to deliver raw water from the offtake
- approximately 270km of supply pipeline from the river offtake to a new bulk water storage near Broken Hill (the Pipeline will be underground and constructed substantially of Australian rolled steel)
- a series of supply pump stations and associated infrastructure along the supply pipeline necessary to deliver raw water to Broken Hill including any required storages
- electrical works to run the supply pump stations, and
- Supervisory Control and Data Acquisition (SCADA), telemetry and Programmable Logic Controller (PLC) systems.

In determining the design solution, the supply pipeline diameter and bulk water storage capacity together with the locations of the specified pumping stations were assessed to obtain the lowest whole of lifecycle cost. The John Holland MPC Group Joint Venture design considered the following:

- hydraulic analysis to determine the operating pressure based on each pipe size to ensure that pipe pressure rating was adequate for the static pressure rise and pipeline friction losses at the design flow
- the optimal number of pump stations, resulting in four,[31] in the locations identified in the RFT (avoiding the cost and time delay associated with further environmental approvals if alternative locations were considered)
- estimating the capital cost of pipelines, pump stations, balancing tanks, bulk water storage and power supply

31 The four pump stations are considered in the review of the Pipeline Design, which is within scope of this Review. However, the fourth and closest pump station to Broken Hill will be an asset of Essential Water and will be factored in the Prices determined under the Essential Water Price Review.

- the volume/size of the bulk water storage considering the relative impacts of evaporation, algae management, available area and geotechnical issues for each option
- estimating the major operating cost of power – electricity consumption for each configuration
- the availability and timing of the nearest power source, and
- Net Present Value (NPV) analysis of capital and operating costs to determine the lowest whole of life cost.

The final Pipeline design proposed by the John Holland MPC Group Joint Venture suggested the use of 711mm diameter pipeline, four pump stations and the construction of a 720ML bulk water storage facility. This was informed by a desktop optimisation process of the Pipeline design, the NPV of capital and operating costs for the range of acceptable pipeline diameters and associated pumping stations, bulk water storage and balancing tanks. Based on this analysis it was found that a 711mm diameter pipeline had the lowest lifecycle cost given the 720ML bulk water storage.

However, WaterNSW found that there was less manufacturing capacity for 711mm diameter pipe than what was required and this diameter pipe could not be manufactured to meet the project timeline. Instead, a 762mm diameter pipe was selected over a 711mm pipeline for the following reasons:

- a 711mm pipeline could not be constructed within the required timeline using predominantly Australian rolled steel, as detailed in the Government's Direction to WaterNSW (see Appendix C – Government Directions)
- a predominately 711mm pipeline would require an additional pump station and an extra 26km of electrical transmission line, and
- the concept design using a predominately 711mm pipeline was less robust than the one using 762mm diameter pipeline and the risk of requiring system changes was reduced.

For the 21km section from the third pump station to the Bulk Water Storage, a 559mm pipeline was selected and included in the John Holland MPC Group Joint Venture tender. However, following contract award and further design work, it was considered that the design could be further optimised by increasing the diameter of this section to 762mm. Although, this change increased the capital cost by approximately $1.4 million, NPV analysis over 20 years showed the reduction in power costs offset the additional capital expenditure.

6.1.3 Proposed capital expenditure of the Pipeline

The D&C contract consists of 3 projects:

1. Construction of the Pipeline (Project 1)
2. Additional works from the bulk water storage facility to Essential Water's Mica Street Water Treatment Plant in Broken Hill (Project 2), and
3. Construction of electricity grid connections close to the town centres of Broken Hill and Wentworth (Project 3).

A breakdown of WaterNSW's proposed capital expenditure of the Pipeline (Project 1) is detailed in Table 6.3 and is comprised of the following elements:

- Contractor costs for the construction of the Pipeline, including the $330 million fixed price for the D&C contract.
- Contract variations specified in the D&C contract, including the change of pipe size from 559 to 762 diameter, at a current total cost of $1.4 million.
- Distributed costs, which represent 16% of the total contract costs of the Pipeline.
- A contingency for future variations at P90 (90% confidence) representing 12% of the total contract costs of the Pipeline, to be updated throughout construction of the Pipeline. WaterNSW has advised that an updated figure reflecting actual variations and any residual contingency will be provided to IPART ahead of the final determination.
- Financing costs, which cover the costs of financing the project until the time of the determination based on IPART's WACC updates of August 2017 and February 2018.[32]

Table 6.3 Capital Expenditure for Project 1, 2017-18 and 2018-19 ($'000, $nominal)

	2017-18	2018-19
Contract costs – construction of the Pipeline	200,966	127,559
Contract variations	421	1,106
Distributed costs	31,876	20,366
Contingency	25,028	15,991
Financing costs	4,351	17,681
Total	**262,642**	**182,703**

Source: WaterNSW pricing proposal to IPART, June 2018, p 54.

The proposed forward capital expenditure over the 4-year period to 2022-23, as detailed in Table 6.4, is relatively small and reflects a planned land purchase in 2019-20 and asset renewals in 2022-23.

Table 6.4 Capital Expenditure 2017-18 and 2018-19 ($'000, $2018-19)

	2019-20	2020-21	2021-22	2022-23
Capital Expenditure	500	0	0	54

Source: WaterNSW pricing proposal to IPART, June 2018, p 61.

6.2 WaterNSW's proposed capital expenditure for offtakes

WaterNSW's proposal to form separate capital accounts for the Pipeline (a RAB) and offtake (an annuity) reflects WaterNSW's intention to levy separate water delivery charges to Essential Water and for each offtake outlet.[33]

The estimated cost of the offtakes incorporates the following elements:

32 IPART, Fact sheet – WACC Biannual update – August 2017 and February 2018.
33 WaterNSW's proposed prices are discussed in Chapter 9.

- contractor costs for installation of 3 offtakes,[34] and
- financing costs for the installation of the offtakes.

A breakdown of capital expenditure for the offtake assets is detailed in Table 6.5.

Table 6.5 Capital Expenditure for offtakes over 2017-18 and 2018-19 ($'000, $nominal)

	2017-18	2018-19
Contractor costs of farm offtakes	152	98
Financing cost	3	13
Total	**155**	**112**

Source: WaterNSW pricing proposal to IPART, June 2018, p 55.

6.3 IPART's response to WaterNSW's proposed capital expenditure

We have not formed a preliminary view on WaterNSW's proposal on capital expenditure for the Pipeline and offtakes at this stage. To make our draft decision, we will review the proposal, and engage a consultant to conduct:

- a strategic review of WaterNSW's procurement of the construction of the Pipeline and offtakes, and
- a detailed review of the prudence of WaterNSW's capital expenditure and the efficiency of its forecast expenditure.

We will ask our expert consultant to assess and provide advice on whether the capital investment strategy of the Pipeline is efficient, including:

- whether the design of the Pipeline and whole of life cycle planning, including assessment of capital and operating expenditure trade-offs, are best-practice and resulted in prudent and efficient investment decisions, and
- whether the procurement processes by WaterNSW to engage the contractors who will design, build, operate and maintain the Pipeline were effective in facilitating prudent and efficient investment decisions.

We will only include capital expenditure in the RAB if we consider it to be prudent and efficient. This assessment will be made in light of the Government's directions relevant to the Pipeline and this review. We will also consider feedback from stakeholders including WaterNSW throughout this review.

IPART seeks comments on the following

11 How should we assess the prudency and efficiency of WaterNSW's decisions on capital expenditure in light of the NSW Government's directions regarding the Pipeline?

12 How did the NSW Government's directions impact on WaterNSW's scoping, design and running of the procurement process for the Pipeline?

13 Is procuring the construction of the Pipeline through a design, build, operate and maintenance (DBOM) contract efficient?

34 WaterNSW has advised that there are now 5 offtakes, as at the time of this Issues Paper.

14 Did WaterNSW's tender and procurement process for the construction and operation of the Pipeline maximise the potential for competition amongst bidders and ensure prudent and efficient decisions were made?

15 How should we assess the market's response to WaterNSW's request for tender for the construction and operation of the Pipeline and the efficacy of WaterNSW's procurement processes?

16 Is the final design solution of the Pipeline optimal? Are there other factors we should take into account?

17 Is WaterNSW's proposed capital expenditure on the Pipeline and offtakes, including contract variations, distribution and contingency costs, efficient?

7 Allowances for return on assets, depreciation and tax liabilities

To calculate the allowances for a return on assets and regulatory depreciation in WaterNSW's Murray River to Broken Hill Pipeline (the Pipeline) revenue requirement, we need to determine three key inputs:

- the value of the Pipeline's Regulatory Asset Base (RAB), which represents the economic value of the assets used to deliver the monopoly services
- the appropriate asset lives and depreciation method for the Pipeline's RAB, and
- the appropriate rate of return (eg, using the WACC) on the Pipeline's RAB.

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

7.1 The value of the Pipeline's RAB

We will need to establish an opening RAB for the Pipeline in 2018-19 (the first year of the 2019 Pipeline determination). The Pipeline is a new asset, with no established RAB, that is being built during 2017-18 and 2018-19.

We will be assuming a starting RAB of $0 in 2017-18. From this starting point we will incorporate the prudent and efficient capital expenditure in building the Pipeline in each year of construction. We will roll forward the RAB in each of the pre commission years to determine the starting RAB value for 2018-19.

We will also need to roll forward the opening RAB to the end of the 2019 determination period by including prudent and efficient forecast capital expenditure over the period, and making adjustments for other forecast changes to the RAB (eg, asset disposals, capital contributions and regulatory depreciation). This will give the RAB for each year of the 2019 determination period.

Table 7.1 shows WaterNSW's proposed opening RAB for the 2019 period and the adjustments it made to derive that value. Table 7.2 shows its proposed RAB and adjustments for each year of the 2019 determination period.

Table 7.1 WaterNSW proposed RAB roll forward for 2017-2019 ($'000, $ nominal)

	2017-18	2018-19
Opening RAB	0	265,925
Capital expenditure	262,642	182,703
Less: Cash capital contributions	0	0
Less: Asset disposals	0	0
Less: Regulatory depreciation	0	0
Indexation	3,283	8,932
Closing RAB	265,925	457,560

Source: WaterNSW pricing proposal to IPART, June 2018, p 53.

Table 7.2 WaterNSW's proposed RAB in each year of the 2019 determination period ($'000, $2018-19)

	2019-20	2020-21	2021-22	2022-23
Opening RAB	457,560	452,340	446,621	440,901
Capital expenditure	500	0	0	54
Less: Forecast cash capital contributions	0	0	0	0
Less: Forecast asset disposals	0	0	0	0
Less: Proposed regulatory depreciation	5,719	5,719	5,719	5,720
Closing RAB	452,340	446,621	440,901	435,236

Source: WaterNSW pricing proposal to IPART, June 2018, p 60.

WaterNSW's proposed capital expenditure is discussed in Chapter 6.

7.2 Rate of return

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

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

We will use a real post-tax WACC to calculate the allowance for a return on assets, and provide for an explicit tax allowance as a separate cost building block. We propose to use our current methodology and process for calculating the WACC.[35]

35 Our current methodology is set out in: IPART, *Review of our WACC method – Final Report*, February 2018.

7.2.1 We seek comment on how we set some WACC parameters

In our WACC Final Report, we decided we would seek comment on certain WACC parameters in subsequent price reviews.

How should we update the cost of debt?

We decided to transition to a trailing average cost of debt in our 2018 WACC method. In our view, a trailing average cost of debt allows regulated businesses to better manage their refinancing risk, while maintaining their incentives for efficient investment.

Implementing a trailing average involves updating the cost of debt at the start of each year within a regulatory period.

To do this, we need to decide in each price review whether:

- annual changes in the cost of debt will flow through to prices in the subsequent year (annual updating), or
- whether they will be cumulated and passed through via a regulatory true-up in the subsequent regulatory period.

We will re-estimate equity betas

The equity beta for a firm measures the relationship between its returns on equity to that of the market as a whole. A firm with more volatile returns than the market would have an equity beta greater than 1, and a firm with less volatile returns than the market would have an equity beta of less than 1.

We also decided we would re-estimate the equity beta at each price review, including this price review. While we may not necessarily change the equity beta that we have determined for the water industry, we are mindful that an equity beta analysis outside the current price review may not be sufficiently timely.

To estimate the equity beta, we will use the broadest possible selection of proxy companies to estimate equity beta (but exclude thinly traded stocks). In forming this selection, we seek stakeholder feedback on the comparable industries we should include to establish the proxy companies we use in this review.

We consider that we should review the gearing ratio at the same time that we review the equity beta. As for the equity beta, we would not automatically change the gearing we use in WACC calculations.

7.2.2 WaterNSW's proposed WACC

WaterNSW's WACC represents the return it requires on its capital assets to service its debts and make a commercial return on equity for its shareholders. Table 7.3 outlines the WACC parameters WaterNSW is proposing for the Pipeline.

Table 7.3 WaterNSW proposed WACC parameters

	Current Market data	Long term averages
Nominal risk free rate	2.7%	3.9%
Inflation	2.5%	2.5%
Debt margin[a]	1.8%	3.2%
Debt to total assets	60%	60%
Market risk premium	9.1%	6.0%
Gamma	0.25	0.25
Equity Beta	0.7	0.7
Cost of equity (nominal post-tax)	9.1%	8.1%
Cost of debt (nominal pre-tax)	4.5%	7.1%
Real post tax WACC	3.7%	4.9%
Mid-point WACC	4.3%	

a Includes 12.5 basis points for debt raising costs.

Source: WaterNSW pricing proposal to IPART, June 2018, p 65.

WaterNSW is proposing that IPART apply annual updates to the cost of debt

WaterNSW is requesting that IPART apply annual updates to the cost of debt for the Pipeline determination. It argues that this is superior to a true-up to apply at the next determination period, for the following reasons:[36]

Customers interests: WaterNSW puts forward that annual updates provide smaller incremental price changes to customers and reduce price shocks at regulatory reset dates. WaterNSW is particularly concerned about this risk given that water bills can have a material and direct impact on the end user.

Cashflow timing impacts: WaterNSW states that without annual updates the cashflow impact of differences between the cost of debt allowance and the actual interest costs are borne by the firm and may impact on credit ratings. It claims that this may impact the financeability of the firm.

Incentive to incur efficient debt raising costs: WaterNSW expresses that under annual updates the annual cost of debt allowance would reflect as much as possible the actual interest costs expected to be incurred by a prudent and efficient firm. WaterNSW proposes that this would incentivise the firm to adjust its debt raising practices on an annual basis so as to incur debt raising costs which align with the benchmark allowances.

7.2.3 IPART's response

We reviewed our method for determining the WACC in 2018, and we propose to use our updated method in this review.[37] Box 7.1 summaries the key changes we made to our WACC method (compared to our previous 2013 method) in the 2018 review.

36 WaterNSW pricing proposal to IPART, June 2018, pp 66-67.

37 IPART, *Review of our WACC method – Final Report*, February 2018.

Box 7.1 Summary of key changes to our WACC method

We use a 'trailing average' approach to calculate both historic and current cost of debt

Our 2013 method set a cost of debt as the midpoint between our estimates of the historic and current cost unless there is significant economic uncertainty, and did not update this cost during the regulatory period. In response to stakeholder feedback that this approach creates a refinancing risk for regulated businesses, we decided to estimate both the historic and current cost of debt using a trailing average approach, which will update the cost of debt annually over the regulatory period.

We update the cost of debt annually within a regulatory period and decide how annual changes are passed through on a case-by-case basis, as part of our price review process.

We considered whether we should update prices to reflect the updated cost of debt annually, or use a regulatory true-up in the notional revenue requirement for the next period, which we would pass through to prices at the beginning of the next period. We decided to determine the most appropriate option on a case-by-case basis, as part of our price review process. Where we decide to use a true-up, we will use the WACC as the discount rate for calculating the true-up.

We use the expected rate of inflation over the regulatory period

We decided to use the expected rate of inflation over the regulatory period. We calculate the expected rate of inflation by first calculating the geometric average of the forecast change in the level of prices over the regulatory period, and then converting this average into an annual inflation rate separately.

Source: IPART, *Review of our WACC method – Final Report*, February 2018.

We should update the cost of debt with a true-up

Our preliminary position is to not adopt an annual update for the cost of debt, and instead apply an NPV-neutral true-up at the next determination period.

We prefer the option of applying a regulatory true-up at the subsequent determination period because it provides certainty to customers about their prices over the upcoming determination period. In contrast, if we applied an annual update, a large change in the cost of debt would flow through to customer prices in the following year of the determination period, unless additional side constraints were imposed in the determination.

IPART seeks comments on the following

18 Do you agree with our preliminary position that a regulatory true-up in the following period is the appropriate method to account for changes in the cost of debt over the 2019 determination period?

19 What comparable industries should we consider to establish the proxy companies we use to estimate the beta in this review?

7.3 Regulatory depreciation

The allowance for regulatory depreciation included in the revenue requirement (and used in calculating the value of the RAB, as discussed above) is intended to ensure that the capital the

regulated business (or its owner) invests in the regulatory assets is returned over the useful life of each asset.

To calculate this allowance, we need to determine the appropriate lives for the assets in the Pipeline's RAB, and the appropriate depreciation method to use.

7.3.1 WaterNSW's proposal on regulatory depreciation

WaterNSW is proposing to adopt the straight-line method for calculating forecast depreciation of the RAB over the regulatory period, and apply a useful life of 80 years for existing and new depreciating assets.[38]

WaterNSW has forecast no capital expenditure on depreciating assets during the first three years of the 2019 determination period. In 2022-23 (the final year of the 2019 determination period) WaterNSW has forecast $54,000 ($2018-19) which represents approximately 0.1% of the RAB in 2022-23.[39] Based on these factors, WaterNSW has proposed flat regulatory depreciation during the determination period, shown in Table 7.4.

Table 7.4 WaterNSW proposed calculation of depreciation – Pipeline RAB ($'000)

	Asset value		Useful life		Depreciation
Depreciation of existing assets	457,560	/	80	=	5,719

Source: WaterNSW pricing proposal to IPART, June 2018, p 63.

7.3.2 WaterNSW proposal on offtake assets

WaterNSW has proposed a payment period of 20-years to calculate the annuity for the offtake assets, based on the proposed 20-year economic life of the assets.

7.3.3 IPART's response

Regulatory depreciation depends on the value assigned to the RAB, the expected or assumed life of those assets, and the depreciation method used. For this determination, we propose to continue to use the straight-line depreciation method to calculate the Pipeline's return of capital. This means that the total value of an asset is recovered evenly over its assumed life.

As part of our review we will consider the full and remaining lives for assets in the RAB and appropriate asset lives for forecast capital expenditure deemed prudent and efficient.

IPART seeks comments on the following

20 Is WaterNSW's proposed allowance for regulatory depreciation, including the assumptions (eg. asset values, asset lives and treatment of offtake assets) underpinning this allowance reasonable?

38 WaterNSW pricing proposal to IPART, June 2018, p 62.

39 It has forecast approximately $500,000 of capital expenditure in 2019-20 related to land expenditure and therefore not contributing to depreciation.

7.4 Allowance for tax

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

As a State Owned Corporation, WaterNSW is liable to pay the NSW Government an equivalent amount to the tax that it, and its Pipeline business, would have paid to the Commonwealth Government if it was a privately owned business. We set a tax allowance in our building block framework to reflect the full efficient costs that a utility would incur if it were operating in a competitive market.

We calculate the tax allowance for each year by applying a 30% statutory corporate tax rate adjusted for gamma to the business's (nominal) taxable income.[40] For this purpose, taxable income is the notional revenue requirement (excluding tax allowance) less operating cost allowances, tax depreciation, and interest expenses. As part of calculating the appropriate tax allowance, the business is required to provide forecast tax depreciation for the determination period. Other items such as interest expenses are based on the parameters used for the WACC, and the value of the RAB.[41]

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

7.4.1 WaterNSW's proposal on the tax allowance

Over the 2019 determination period WaterNSW's total proposed tax allowance is $4.5 million. Its proposed tax allowance is shown in Table 7.5.

Table 7.5 WaterNSW proposed tax allowance for the 2019 determination period ($'000, $ nominal)

	2019-20	2020-21	2021-22	2022-23
Income				
Required revenue (*excl tax*)	30,988	31,394	31,602	32,347
Cash contributions	0	0	0	0
Capital gain from asset sales	0	0	0	0
Total Income	30,988	31,394	31,602	32,347
Expenditure				
Operating expenditure	5,350	5,350	5,168	5,517
Interest expense	16,233	16,439	16,636	16,833
Tax depreciation	5,567	5,567	5,567	5,567
Total expenditure	27,150	27,356	27,370	27,917
Accumulated tax losses	0	0	0	0
Taxable income	3,838	4,038	4,231	4,429

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

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

	2019-20	2020-21	2021-22	2022-23
Tax allowance (*excl. gamma adjustment*)	1,449	1,488	1,521	1,553
Adjustment for gamma	(362)	(372)	(380)	(388)
Tax allowance (adjusted for gamma)	**1,087**	**1,116**	**1,141**	**1,165**

Source: WaterNSW pricing proposal to IPART, June 2018, p 69 and supporting modelling provided with the pricing proposal.

Adopting the prime cost method to calculate tax depreciation

WaterNSW is proposing to adopt the prime cost method to calculate the tax depreciation forecast for the 2019-2023 regulatory period. It asserts that the prime method is consistent with the expected wear and tear of the pipeline asset.[42] This is also consistent with the proposed approach for regulatory depreciation.

Proposed notional gearing ratio of 60:40 debt to equity

WaterNSW is proposing to use a notional gearing ratio of 60:40 debt to equity to calculate the interest deductions for the tax allowance. It asserts that this is consistent with the Pipeline's actual gearing ratio as specified in the Statement of Corporate Intent (SCI).

7.4.2 IPART's response

WaterNSW has used a 30% corporate tax rate in the calculation of its tax allowance for the Pipeline. In March 2017, the Commonwealth enacted legislation that introduced different rates of corporate income tax for businesses of different sizes.

Under the legislation, from 1 July 2018 a business with an aggregated turnover of less than $50m (base rate entities) will pay 27.5% tax, while companies with a higher turnover must pay 30% tax on all their taxable income.[43] From 2024-25, base rate entities will pay 27.0% tax, and this rate will reduce to 26.0% in the following year and 25.0% in 2026-27. Thresholds are not indexed for inflation.

The introduction of the company tax threshold raises two questions for IPART when estimating a regulated entity's tax allowance:

1. Should IPART take the variable tax rates into consideration when modelling the tax allowance for regulated entities, and if so
2. What business unit level NRR should be compared to the threshold (eg, the NRR of all of WaterNSW's operations, its rural operations or just the Pipeline), and how should IPART account for the variable corporate tax rate in its tax allowance modelling?

7.4.3 Preliminary views

IPART's preliminary view is:

1. IPART should take into consideration the variable corporate tax rates in calculating the Pipeline's tax allowance.

42 WaterNSW pricing proposal to IPART, June 2018, p 68.
43 *Treasury Laws Amendment (Enterprise Tax Plan) Act 2017*.

2. That, as a default, we would use the nominal NRR for the business unit level for which the WACC parameters are set as the comparator to the threshold.[44]
3. That, where the WACC parameters are set on a basis other than the whole business, we would consider on a case-by-case basis whether to use the whole of business nominal NRR as the comparator to the threshold.
4. To determine the appropriate tax rate:
    a) Our preliminary views is to use 30% as the default tax rate to estimate the Pipeline's tax allowance, then
    b) Take the average of the nominal annual NRR estimates over the regulatory period.
        i) If this average is greater than the threshold, we propose to apply the 30% tax rate in all years of the review period.
        ii) Conversely, if the average is below the threshold, we propose to apply the 27.5% tax rate in all years of the review period.

    While we acknowledge businesses with turnover near the threshold may attract a different tax rate one year to the next, it is our preliminary view that this cannot be estimated in advance, and that a simple approach to assessing which tax rate to use will increase certainty in the modelling of the Pipeline's NRR.

In relation to which business unit level to use, for the Pipeline, our preliminary position would be to use the business unit level related to the NRR for the Pipeline only. That is, IPART would not take into consideration the broader WaterNSW business, as we propose the WACC parameters would be set based on the Pipeline only, rather than the whole WaterNSW business.

We are interested in stakeholders' views on IPART's preliminary position in relation to the assessment and treatment of the variable corporate tax rate in the calculation of the Pipeline's tax allowance.

IPART seeks comments on the following

21 Should we take the variable corporate tax rates into consideration in our review of the Pipeline's tax allowance?

22 For the Pipeline, should we use the same business unit level for determining the tax rate as we do for determining the WACC (ie, the NRR of the Pipeline rather than the NRR of the broader WaterNSW business), or are there reasons to move away from applying this approach?

23 Should we use 30% as the default tax rate, and if the Pipeline's NRR is, on average over the determination period, below the threshold then use the lower tax rate in recalculating the tax allowance for the whole of the review period?

24 Is WaterNSW's proposed allowance for tax, including the assumptions (eg. asset values, depreciation method and gearing ratio) underpinning this allowance, reasonable?

44 Due to circularities that using turnover as a comparator to the $50m threshold would create in the building block framework, we propose to use a business's NRR as a proxy for turnover.

8 Forecast water sales and customers numbers

Once we determine the Notional Revenue Requirement (NRR), the next step in our approach is to decide on the Pipeline's forecast water sales and customer numbers. We use these forecasts to calculate prices that are expected to recover the NRR.

It is important that the forecasts are reasonable. If forecasts differ significantly from actuals over the determination period, this will result in the utility over- or under-recovering its NRR. If actual water sales and/or customer numbers are greater than the forecast demand used to calculate prices, customers will pay too much and the Pipeline will over-recover its NRR. The opposite will occur if actual water sales and/or customer numbers are less than the forecast.

This chapter outlines WaterNSW's proposal on forecast water sales and customer numbers for the 2019 determination period, and our preliminary response.

8.1 WaterNSW has forecast increasing demand over the determination period

WaterNSW's pricing proposal projects demand over the 2019 determination period based on a linear regression using 10 years of historical demand data. This forecast predicts increases in water sales to Essential Water Broken Hill of an average of 50ML per year over each year of the determination period. Compared to alternative forecasts which project reductions in demand over the 2019 determination period, WaterNSW claims that its projection of increased consumption:

> "...better reflects the likely trends in the underlying factors, specifically the lifting of a downward price effect on demand, and a return to more typical annual rainfall conditions (from the high rainfall periods of 2010-2011 to lower rainfall), both resulting in an increase in demand per domestic dwelling which offsets the general decline in population."[45]

WaterNSW's forecasts of sales to Essential Water and offtake customers over the 4-year 2019 determination period are shown in Table 8.1.

Table 8.1 Projected annual water sales to the Pipeline's customers (ML)

	2019-20	2020-21	2021-22	2022-23
Essential Water (Broken Hill)	5,635	5,687	5,757	5,786
Offtake customers	30	30	30	30
Total	5,665	5,717	5,787	5,816

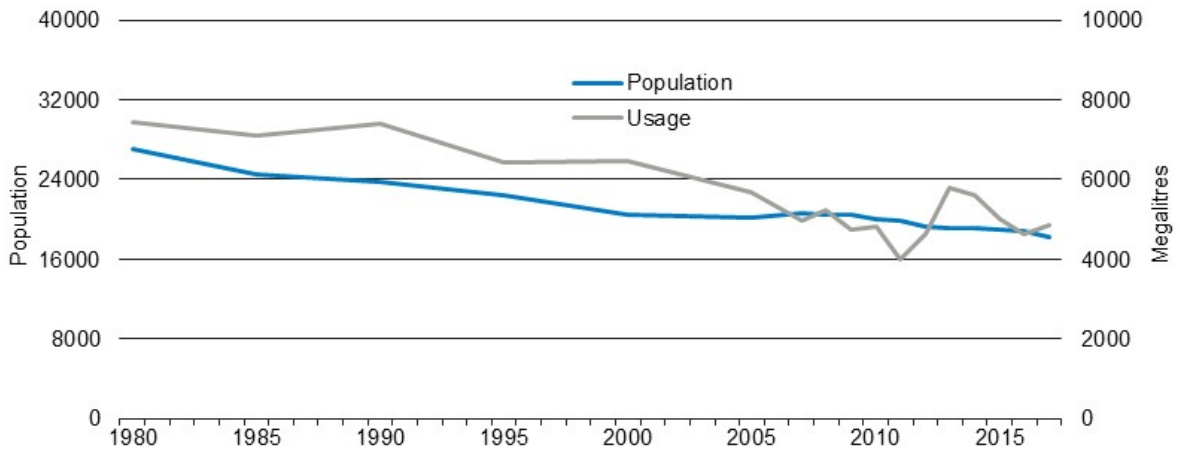
Note: Demand forecasts are net of any evaporative losses resulting from water being stored at the bulk water storage facility near Broken Hill.

Source: WaterNSW pricing proposal to IPART, July 2018, supporting modelling.

45 WaterNSW pricing proposal to IPART, June 2018, pp 71-72.

Figure 8.1 compares trends in population and water consumption in Broken Hill from 1980 to 2017. While year on year changes in water consumption appears to be more volatile than changes in population, both have trended down over the last 40 years.

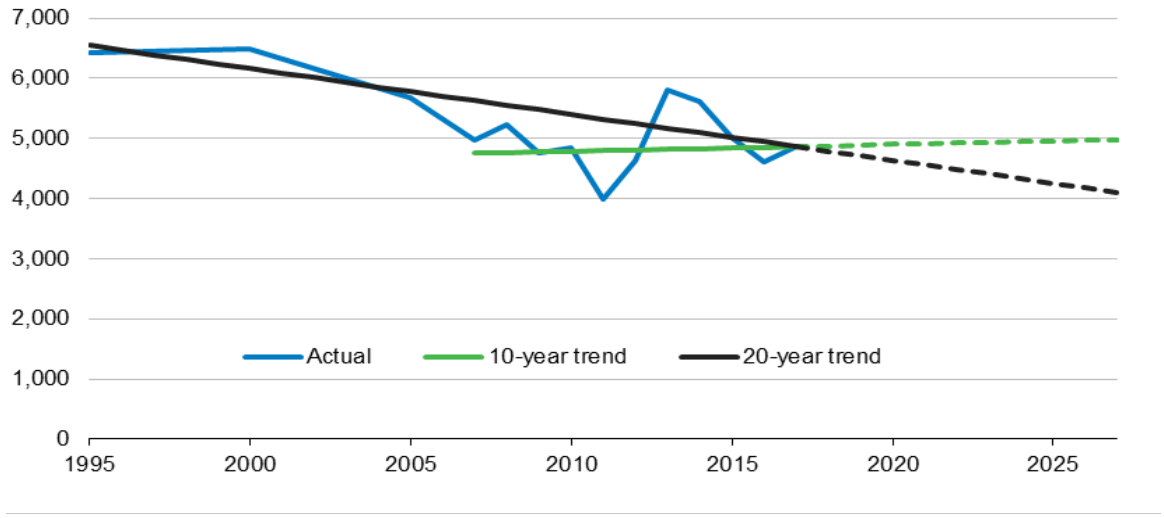
Figure 8.1 Population and water consumption in Broken Hill 1980 to 2017



Data source: Essential Water pricing proposal to IPART, July 2018 AIR; 2008.0 - Census of Population and Housing, Australia, 2016.

Figure 8.2 illustrates that using historical data to project consumption is very sensitive to the period of historical data used to make the projection. For example, forecasting demand based on the last 10-years of data results in an upward projection. However, forecasting demand based on the last 20 years of data results in a downward projection.

Figure 8.2 Alternative forecasts using different periods of historical data (ML per year)



Data source: Essential Water pricing proposal to IPART, July 2018 AIR and IPART analysis.

8.2 Forecast customer numbers

WaterNSW's forecasts of the Pipeline's direct customers over the 2019 determination period are shown in Table 8.2. The Pipeline's forecasts customers numbers do not reflect the change in end user customers in Broken Hill as these are Essential Water's customers. In its proposal WaterNSW discusses the potential for offtake customer numbers to increase once the Pipeline is operational, to a potential 14 customers.[46]

Table 8.2 WaterNSW forecast Pipeline customers

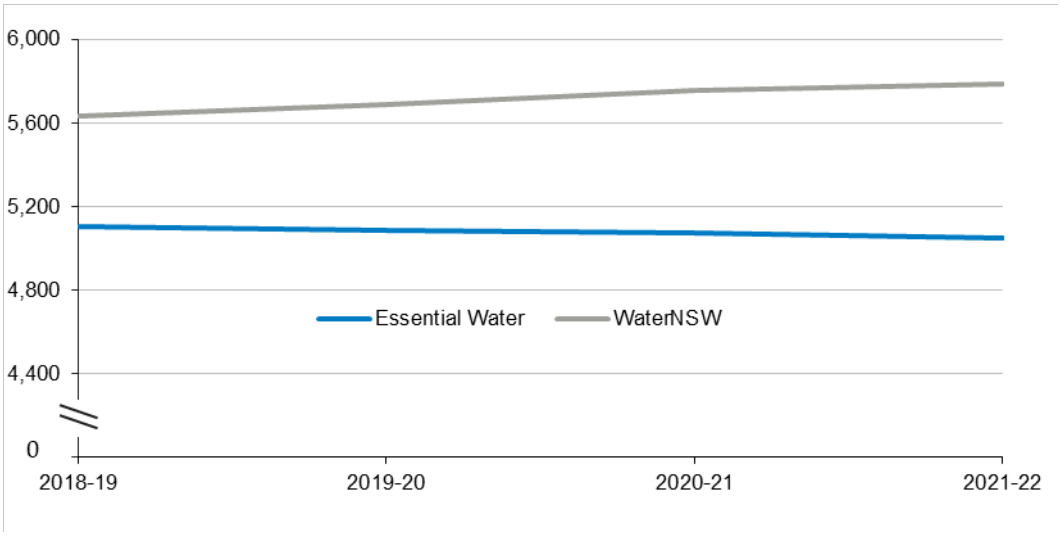
	2019-20	2020-21	2021-22	2022-23
Essential Water (Broken Hill)	1	1	1	1
Farm offtake customers	3	3	3	3

Source: WaterNSW pricing proposal to IPART, June 2018, p 71-72 and supporting modelling provided with the pricing proposal.

8.3 WaterNSW and Essential Water's demand forecasts are inconsistent

In contrast to WaterNSW's forecasts, in its pricing proposal Essential Water predicted that residential treated water consumption will decline by nearly 1% per year over the period, but that consumption for all other categories (including non-residential and mining customers) will remain flat. It has also assumed no new mining customers during the proposed determination period and no increase in demand from existing mining customers. Figure 8.3 compares the two demand forecasts over the proposed length of the determination period.

Figure 8.3 Comparison of water demand forecasts 2018-19 to 2021-22 (ML)



Note: WaterNSW demand forecast included only water to be supplied into Broken Hill, offtake customer volumes have been excluded. Essential Water forecast excludes estimate of Sunset Strip customers' demand (40ML/year).

Data source: WaterNSW pricing proposal to IPART, June 2018, supporting modelling and Essential Water pricing proposal to IPART, July 2018, p 101.

46 WaterNSW pricing proposal to IPART, June 2018, pp 71-72

We note that if WaterNSW's forecasts are of sales to Essential Water and if Essential Water's forecasts are of sales to its end use customers, this may explain some of the difference between the forecasts. Under this scenario (all else equal), Essential Water's forecasts of sales would be lower than WaterNSW's forecasts due to leakage in the Essential Water network. However if both forecasts are made on the same basis (all else equal), they should be the same. The potential difference in the basis of the forecasts does not explain why they have different trajectories.

8.4 IPART's response to WaterNSW's proposed demand forecasts

We will consider WaterNSW's forecast water sales volumes and customer numbers as part of our review, as well as Essential Water's forecast water sales to Broken Hill. We will examine the forecasts and their underlying methodologies and assumptions and seek to establish a sound and consistent basis on which to forecast sales volumes and calculate prices in both the Pipeline and Essential Water price reviews.

IPART seeks comments on the following

25 What would account for differences in demand forecasts between WaterNSW for its Pipeline and Essential Water to its customers in Broken Hill and surrounding townships?

26 Is WaterNSW's approach to forecasting water demand reasonable?

27 Is WaterNSW's projection of increasing water demand in Broken Hill over the 2019 determination period reasonable?

28 Is the number of offtake customers likely to change significantly over the 2019 determination period?

9 Price structures and levels

When we set prices for the WaterNSW Murray River to Broken Hill Pipeline (the Pipeline) we will distinguish between price structures and price levels. Price structures refer to how customers are charged eg, how the costs of providing Pipeline transportation services are split:

- among different types of customers (eg, Essential Water and offtake customers), and
- between different types of charges (eg, fixed charges that apply regardless of volumes transported and variable charges which are levied per megalitre (ML) of water delivered).

Once the structure of prices has been decided, the level of those prices ie, how **much** customers are charged, is driven by the overall amount of revenue to be recovered.

This chapter discusses the pricing principles and other considerations that will guide our decisions on price structures and maximum price levels for WaterNSW. It also sets out WaterNSW's proposed prices, which reflect its proposed revenue requirement and forecast sales and customer numbers discussed in the previous chapters, our considerations in response to WaterNSW's proposed prices and the issues we are seeking stakeholder feedback on.

9.1 Pricing principles

In setting maximum prices (both structures and levels) our overarching principle is that prices should be cost-reflective. This means that:

- Prices only recover sufficient revenue to cover the prudent and efficient costs of delivering the monopoly services.
- Price structures match cost structures, whereby:
  - usage charges reference an appropriate estimate of marginal cost (eg, the additional cost of supplying an additional unit of Pipeline transportation services), and
  - fixed service charges recover the remaining costs.
- Customers imposing similar costs on the system pay similar prices.

Through the signals they send, cost-reflective prices promote the efficient use and allocation of resources, which ultimately benefits the whole community. The sum of the fixed and usage prices customers pay reflects the total cost of the services provided. By reflecting the revenue needed to efficiently provide the services, cost-reflective prices also ensure efficient investment in water infrastructure and service provision.

Other factors we generally consider when deciding on price structures include:

- whether prices are transparent, and easy for customers to understand and WaterNSW to administer, and
- customer preferences.

IPART seeks comments on the following

29 Do you agree that we should set maximum prices in line with the principles of cost-reflective pricing? Are there any other factors we should consider?

9.2 WaterNSW's proposed prices

While the Pipeline is being built to supply water to Essential Water and the Broken Hill community, WaterNSW has also conditionally agreed to supply a small number of offtake customers along the Pipeline's route. WaterNSW has proposed that the majority of its revenue requirement be recovered through fixed charges and that the majority of the Pipeline's costs be passed onto Essential Water. Prices for offtake customers would reflect the additional (or incremental) costs of supply, as well as a small contribution to the fixed costs of the Pipeline (which would otherwise be recovered from Essential Water).

WaterNSW has proposed price structures and levels that are designed to recover its expected costs. It has minimised its demand and expenditure risk by matching its proposed prices to the costs it will incur under its operating and maintenance (O&M) contract as closely as possible. The proposed structure of WaterNSW's prices and proposed price levels are set out in the tables below and summarised in Table 9.1.

Table 9.1 WaterNSW's proposed price structure

To recover:	Essential Water pays:	Offtake customers pay:
Cost of building assets	Fixed charge recovering Pipeline costs	Fixed charge recovering: - incremental cost of offtake and - contribution to Pipeline costs
O&M costs	Fixed charges recovering: • Fixed O&M costs • Fixed energy costs • Shut down, restart and standby costs (as applicable)	N/A
	Variable electricity charge based on demand for water	Offtake customers charged at single point on variable electricity charge scale per ML
Cost of early water	Early water variable charge[a]	N/A

[a] WaterNSW has proposed that this charge would apply in the event that water was called on between the date of completion of the Pipeline (December 2018) and prior to commission (April 2019). We note that the prices we set under our determination will not apply until 1 July 2019.

Table 9.2 WaterNSW's proposed price levels ($2018-19)

	2019-20	2020-21	2021-22	2022-23	% change 2019-20 to 2022-23
Prices for Essential Water	**$'000**	**$'000**	**$'000**	**$'000**	**%**
WaterNSW fixed charge $/year	27,021.11	26,814.78	26,570.24	26,373.56	-2.4
Fixed O&M charge $/year	1,595.96	1,598.33	1,587.10	1,585.28	-0.7
Fixed electricity charge $/year	28.66	28.65	28.66	28.65	0.0
Electricity demand charge $/year (if levied for full year)	820.80	820.80	820.80	820.80	0.0
Electricity demand charge $/month (if levied by month active)	68.40	68.40	68.40	68.40	0.0
Variable charges $/ML by weekly demand	**$**	**$**	**$**	**$**	
1 ML to 10 ML	2,000.13	1,863.48	1,580.86	1,831.71	
11 ML to 20 ML	808.58	752.79	636.70	726.52	
21 ML to 30 ML	586.25	545.55	460.54	520.33	
31 ML to 40 ML	488.88	454.78	383.38	430.00	
41 ML to 50 ML	434.42	404.01	340.23	379.48	
51 ML to 60 ML	399.76	371.71	312.77	347.36	
61 ML to 70 ML	375.47	349.07	293.52	324.83	
71 ML to 80 ML	357.75	332.55	279.48	308.39	
81 ML to 90 ML	344.26	319.97	268.79	295.88	
91 ML to 100 ML	333.29	309.75	260.10	285.70	
101 ML to 110 ML	324.78	301.84	253.43	278.24	
111 ML to 120 ML	321.27	298.73	251.38	279.48	
121 ML to 130 ML	318.09	295.91	249.49	280.33	
131 ML to 140 ML	315.51	293.62	247.97	281.14	
141 ML to 150 ML	313.03	291.42	246.47	281.63	
151 ML to 160 ML	311.35	289.94	245.54	282.51	
161 ML to 170 ML	309.68	288.48	244.59	283.10	
171 ML to 180 ML	308.25	287.23	243.82	283.67	
181 ML to 190 ML	307.31	286.43	243.39	284.42	
191 ML to 280 ML	306.51	285.71	242.87	284.29	
Prices to offtake customers	**$**	**$**	**$**	**$**	**%**
Offtakes fixed charge $/year	9,958.07	9,862.23	10,022.27	9,435.50	-5.2
Variable charge $/ML	321.27	298.73	251.38	279.48	-13.0
Variable charge $/Kilolitre (kL)	0.32	0.30	0.25	0.28	-13.0

Source: WaterNSW Broken Hill Pipeline Pricing Proposal to IPART, 30 June 2018, pp 86-88.

Table 9.3 Proposed shutdown, standby and restart charges to Essential Water ($2018-19)

($)	Temporary	Short Term	Long Term
	(Less than 30 days)	(30 to 90 days)	(More than 90 days)
Shutdown payment (per shutdown event)	1,142.66	2,302.03	11,962.43
Restart payment (per restart event)	571.33	1,151.02	10,222.32
Standby payment (per day)	4,241.63	4,149.72	4,056.76

Note: The shutdown charge would be levied per shutdown event. Restart charge would be levied per restart event. Standby charges would be levied for each day the Pipeline is in shutdown/standby mode, the period between Shutdown and Restart. To ensure the fixed operational maintenance charge is not levied while the Pipeline is in shutdown/standby, a 'rebate' on the annual fixed operational maintenance charges (minus the asset replacement costs), would be paid to Essential Water, which would prorated based on the number of days in which the Pipeline is in shutdown/standby mode. The O&M contract requires payments to be inflated by a weighting of 29.46% by WPI and 70.54% by CPI. [TBC. WaterNSW only refers to inflating from March 2017 to $18/19, and only included one year of charges in the proposal.]

Source: WaterNSW Broken Hill Pipeline Pricing Proposal to IPART, 30 June 2018, p 88.

Table 9.4 Proposed Early Water Service charge to Essential Water ($nominal)

	$/ML
Early Water Service	411.68

Note: WaterNSW has proposed that this charge would only apply in the event that water was called on between the date of completion of the Pipeline (December 2018) and prior to commission (April 2019). We note that the prices under our determination would not apply until 1July 2019.

Source: WaterNSW Broken Hill Pipeline Pricing Proposal to IPART, 30 June 2018, p 88.

Box 9.1 WaterNSW proposed charges at a glance

WaterNSW is proposing charges to Essential Water of approximately $32m per year consisting of:

1. Fixed charge	approx. $27m per year
2. Fixed operational and maintenance charge	approx. $1.6m per year
3. Fixed electricity charge	approx. $0.03m per year
4. Electricity demand charge	approx. $0.8m per year
5. Variable charge	from $2,000/ML falling to $300/ML based on weekly demand
6. Shutdown payment	from $1,143 up to $11,962 per event based on length of event
7. Restart payment	from $600 up to $10,000 per event based on length of event
8. Standby payment	approx. $4,000 per day
9. Early water service charge	approx. $400/ML[a]

WaterNSW is proposing a charge to each offtake customers of $13,500 per year consisting of:

1. Fixed charge (per offtake)	approx. $10,000 per year
2. Variable charge	approx. $300/ML

a This charge would only apply in the event that water is called on between the date of completion of the Pipeline (December 2018) and prior to commission (April 2019).

Source: WaterNSW Broken Hill Pipeline Pricing Proposal to IPART, 30 June 2018, pp 86-88.

9.3 IPART's response to proposed prices

In considering WaterNSW's proposed prices we have identified three sets of issues:

- How the efficient costs of the Pipeline should be allocated between customers.
- Whether the proposal to reflect the costs in WaterNSW's O&M contract in the prices paid by Essential Water is reasonable and whether setting variable charges to encourage use of the Pipeline may have any unintended consequences.
- Whether the proposed approach to calculating prices for offtake customers is reasonable and whether we should allow for unregulated pricing agreements between WaterNSW and offtake customers.

These issues are discussed in the sections below.

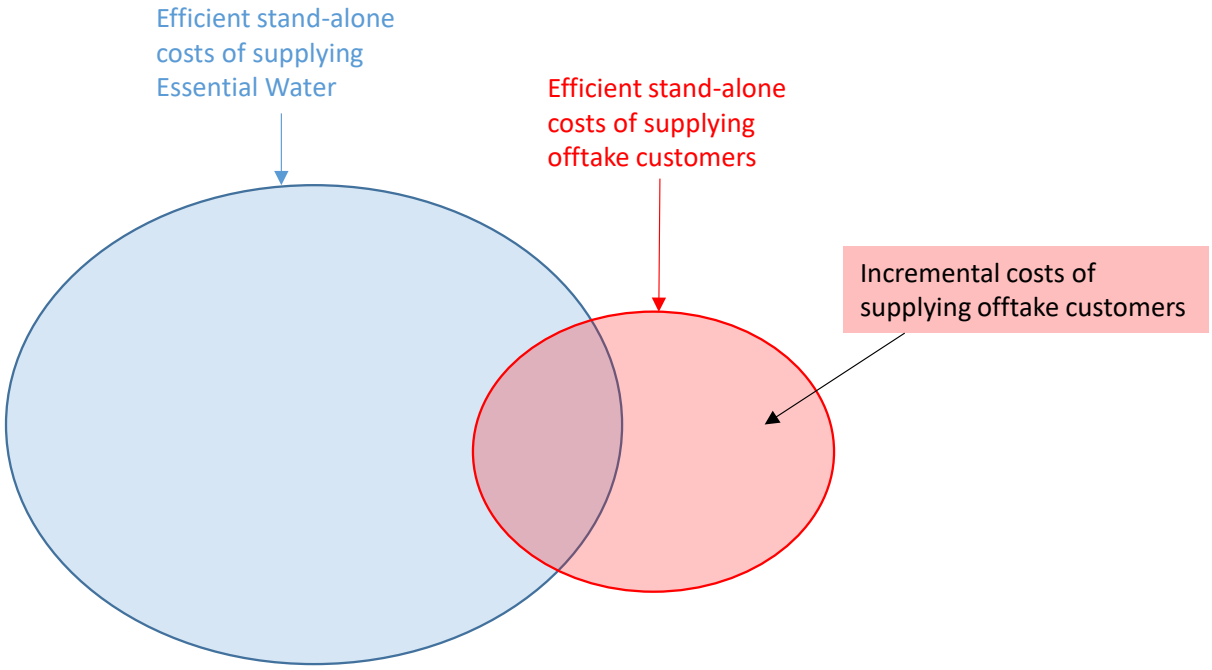
9.4 How should efficient Pipeline costs be allocated between customers?

WaterNSW has conditionally agreed to supply offtake customers along the northern part of the Pipeline (but before the bulk storage point). WaterNSW is proposing that prices for offtake customers reflect the incremental costs of supply, as well as a small contribution to the fixed costs of the Pipeline (which would otherwise be recovered from Essential Water).

If there is no case for a NSW Government share of the Pipeline[47] WaterNSW's pricing proposal raises the question of how the efficient fixed costs of the Pipeline should be allocated between Essential Water and other Pipeline customers.

If it is expected that the available Pipeline capacity will be largely required to supply Essential Water and the Broken Hill community, then it may be reasonable for Essential Water to be charged the full (or stand-alone) efficient fixed costs of the Pipeline. In this instance, offtake customers could be priced on an incremental basis (ie, to not contribute to the fixed costs of the Pipeline), as shown in the figure below.[48]

Figure 9.1 Allocating the costs of the Pipeline



However, if investment in the Pipeline has been made to provide capacity for offtake customers, then offtake customers should contribute to those costs. In general, we need to ensure that the prices we set do not result in cross-subsidies, ie, any customer paying above its stand-alone costs or below its incremental costs.

9.5 Prices for Essential Water

Under WaterNSW's proposal, most Pipeline costs would be recovered from Essential Water. WaterNSW has proposed prices for Essential Water that are designed to recover its expected costs, minimising demand and expenditure risk by matching its proposed prices to the costs it will incur under its O&M contract.

47 And leaving the key issue of what Essential Water's customers in and around Broken Hill can afford to pay to be considered separately as part of our review of Essential Water's prices in Broken Hill.

48 Although we note that theoretically Essential Water and offtake customers could be charged anywhere between the incremental and stand-alone costs of service provision.

A key consideration in assessing WaterNSW's proposal is whether this is an appropriate allocation of risk between WaterNSW and Essential Water, in particular given the extent to which WaterNSW's costs are controllable. For example, to the extent that WaterNSW controls certain aspects of shutdowns and restarts (eg, their duration), there may be an efficiency argument to not pass through all these costs to Essential Water.[49]

IPART seeks comments on the following

30 Are WaterNSW's proposed prices for Essential Water reasonable?

31 Should WaterNSW be exposed to some of the costs of shutdown and standby events, if it can influence the duration (and hence cost) of those events?

9.5.1 Proposed fixed charges for operation and maintenance

WaterNSW considered that most of the Pipeline charges should be levied on Essential Water, as WaterNSW has necessarily incurred capital and operating costs to build and maintain the Pipeline for Essential Water.[50] As well as allocating the fixed capital costs of the Pipeline to Essential Water, WaterNSW has also proposed that a number of fixed operating costs should also be recovered from Essential Water.[51]

WaterNSW considered that the installation of the three offtakes (for offtake customers) would not have increased these costs above what would be reasonably required to serve Essential Water. While this may be the case at the start of the determination period, we will consider whether it is likely to be the case throughout the determination period and whether some other form of cost allocation would be more consistent with our pricing principles.

IPART seeks comments on the following

32 Should prices to Essential Water recover all of the fixed operating and maintenance costs that WaterNSW will be exposed to over the determination period?

9.5.2 Proposed variable charges

A further issue we will consider is the proposed 'declining block tariff' for variable charges. Under WaterNSW's proposal, the variable charge to Essential Water would decrease as the volume of water required to be transported increased.[52] While WaterNSW acknowledged that this pricing structure would encourage increased or full utilisation of the Pipeline, we will consider whether it could result in any unintended consequences.

WaterNSW has proposed charging Essential Water according to a variable charge scale, however offtake customers would be charged at a single point on that scale. Given that the

49 That is, if WaterNSW is exposed to some of the costs of these events (rather than being able to pass them directly though to Essential Water) it is likely to seek to minimise these costs.

50 WaterNSW considered that it is appropriate to apportion costs and charges to customer groups based on the contribution that each customer makes in creating the cost and their requirements for the Pipeline (such as service standards). Essential Water's primary role is to provide drinking water to the residents of Broken Hill. The Pipeline has been constructed for Essential Water to achieve this objective.

51 That is, fixed electricity costs (supply and demand charges) and the fixed O&M costs incurred under the O&M contract.

52 That is, the cost per unit of water transported falls as the volume of water transported increases.

total cost to WaterNSW under its O&M contract will be determined by the total demand from all of its customers, the proposed charges may not match the costs WaterNSW ultimately incurs. We will consider the risks under WaterNSW's proposed variable charges,[53] and whether an alternative approach would be more consistent with our pricing principles.

IPART seeks comments on the following

33 Could setting variable charges to encourage use of the Pipeline have any unintended consequences?

9.5.3 Proposed Early Water Charge

WaterNSW has proposed an Early Water Charge that would be levied per ML of water delivered to Essential Water in the event that water is called on between the date of completion of the Pipeline (December 2018) and prior to commission (April 2019).[54]

Our determination will come into force on 1 July 2019. Any pricing arrangements for the supply of regulated services prior to this commencement date are a matter for agreement between WaterNSW and Essential Water. We note that Essential Water is bound by its current price determination (until this is replaced) and Essential Water is not be able to charge higher than the maximum prices in the existing determination.[55]

9.6 Prices for offtake customers

As discussed above, WaterNSW's proposal outlines its plans to serve a number of pastoralist offtake customers along the northern most 100 km of the Pipeline.[56] WaterNSW is proposing to charge $13,500 per offtake customer (assuming one offtake per offtake customer).[57] This has involved surveying potential interest and analysing willingness to pay.

WaterNSW has:

- Entered into a Letter of Intent with two offtake customers for a 20-year agreement, which binds the offtake customers as long as IPART sets a price of less than $14,000 (per offtake outlet) in real terms per year, inclusive of the transportation of 10 ML each year.
- Entered into an agreement with one offtake customer who will receive access to an offtake close to the bulk water storage at no charge as part of a land purchase agreement between WaterNSW and the offtake customer (the land was acquired from the offtake customer for the bulk water storage).

53 For example, the risk of cost over or under-recovery by WaterNSW and the risks faced by Essential Water and offtake customers under the different proposed charging arrangements.
54 WaterNSW Broken Hill Pipeline Pricing Proposal to IPART, 30 June 2018, p 88.
55 IPART, *Review of prices from 1 July 2014 to 30 June 2018 – Essential Energy's water and sewerage services in Broken Hill, Water – Determination*, June 2014.
56 Potential offtake customers along the first 150 km of the Pipeline from Wentworth are already served by the Darling Anabranch pipeline constructed in 2006 and managed by Anabranch Water as a NSW Private Irrigation District.
57 In the event of two offtake customers being served by a single offtake, the incremental fixed cost component of the $13,500 would be shared between the offtake customers.

WaterNSW estimated a 'full cost recovery' price of $80,000 to $100,000 per offtake customer per year, which reflects the incremental capital expenditure for the offtake, the variable cost of delivering water and a contribution to fixed capital costs.[58] WaterNSW considered this to be 'out of reach' for potential offtake customers and conducted capacity to pay (CTP) analysis,[59] which indicated a range of $18,000 to $25,000 per offtake customer per year.

WaterNSW then surveyed potential customers who responded that the CTP range was too high. Three customers indicated they would be willing to pay up to $14,000 per year for an offtake (inclusive of the cost of transporting 10ML of water). WaterNSW has proposed a charge of $13,500 per year. Table 9.5 shows a breakdown of the $13,500 charge.

Table 9.5 Breakdown of WaterNSW's proposed offtake customer charge

	Offtake installed 2018-19	Offtake installed 2019-20
Annuity	7,310	6,352
Contribution to fixed capital costs	2,648	3,606
Variable cost for 10ML (minimum charge per offtake customer)	3,213	3,213
Total cost ($2018-19)	**13,171**	**13,171**
Total cost ($nominal)	**13,500**	**13,500**

Source: WaterNSW Broken Hill Pipeline Pricing Proposal to IPART, 30 June 2018, p 56.

The annuity is calculated to recover the incremental fixed costs (ie, capital expenditure of $89,000 per offtake)[60] over 20 years[61] based on a WACC of 4.3%.[62] The variable cost is calculated for a minimum take of 10ML based on a variable charge of $321.3/ML in 2019-20.[63] Usage above 10ML per year would incur additional variable charges (at the proposed charge set out in Table 9.2). As set out in Table 9.5, the contribution to the existing fixed capital costs of the Pipeline (eg, $2,648 for offtakes installed in 2018-19) is the difference between the total charge per offtake customer ($13,171) and the sum of the annuity ($7,310) and variable cost ($3,213) per offtake customer.

WaterNSW has proposed that it will offer to install additional offtakes over the 2019-2023 period at either the annual charge set out above or an upfront capital charge of $77,319.[64] WaterNSW proposes that offtake customers who pay this upfront capital charge would only thereafter be required to pay the proposed variable charge for offtake customers for each ML (or kL) of water delivered.

58 Calculated on the basis of the proportion of offtake demand to total demand (ie, allocating fixed capital costs between Essential Water and offtake customers based on their relative contribution to total demand over the year).

59 Refer to WaterNSW pricing proposal to IPART, June 2018, pp 95-97.

60 This is the total costs of $267,000 for constructing three offtake outlets as per Table 6.4 above, divided by the three offtake customers.

61 20 years is considered to be the period over which the offtakes can be expected to be revenue generating assets.

62 This is WaterNSW's proposed WACC, as set out in Chapter 7.

63 This is the proposed variable charge for Essential Water for consumption at a level of 111ML to 120ML per week in Table 9.2 above, which is where the incremental demand from offtake customers is forecast to occur.

64 This mirrors the O&M contract, which allows for the installation of additional offtakes at a fixed cost of $70,290 plus an agreed margin for profit and overhead of 10%. WaterNSW notes that additional supply will be subject to the availability of capacity in the pipeline. Dollar figures in nominal terms. See WaterNSW Broken Hill Pipeline Pricing Proposal to IPART, 30 June 2018, pp 107-108.

We will consider WaterNSW's proposal and, in particular, the assumptions underlying the proposed annuity component of prices and whether estimating the efficient costs of serving offtake customers under our standard building block approach[65] would be more consistent with our pricing principles.[66] We will also consider the consistency of WaterNSW's proposed variable charge with our pricing principles. We note that WaterNSW has agreed to supply one customer access to an offtake (ie, Pipeline connection and transportation services) as part of a land purchase agreement. We will investigate this particular arrangement and assess whether, in effect, the cost of the land was a prudent and efficient cost. We are interested in stakeholder views on these issues.

IPART seeks comments on the following

34 Are WaterNSW's proposed prices for offtake customers reasonable?

35 In particular, is WaterNSW's proposed annuity approach for recovering the incremental capital expenditure associated with offtakes reasonable? Are there other approaches we should consider? Should offtake customers contribute more to the fixed capacity costs of the Pipeline?

9.6.1 Should we allow unregulated pricing agreements?

Our standard form of regulation involves setting maximum prices for regulated services that apply to all customers for each year of the determination period. However, we support introducing pricing flexibility where it is likely to lead to more efficient prices and/or deliver value to customers. In our 2016 reviews of Sydney Water's[67] and Hunter Water's prices,[68] we decided to allow those businesses to enter into unregulated pricing agreements with large non-residential customers.[69]

Unregulated pricing agreements are optional and only entered into if both parties agree (as they both benefit).[70] The nature of the agreements between WaterNSW and offtake customers indicate that these are voluntary agreements entered into by two relatively sophisticated parties. We will consider the potential for agreements between WaterNSW and offtake customers to be treated as unregulated pricing agreements within our price determination.[71]

We are interested in stakeholders' views about whether WaterNSW and offtake customers should be allowed to enter into unregulated pricing agreements, and any appropriate restrictions on such agreements.

65 See Section 3.1.
66 As part of our assessment we will examine the costs that a similar non-residential customer would face if they were served by Essential Water.
67 IPART, *Review of prices for Sydney Water Corporation from 1 July 2016 to 30 June 2020, Water – Final Report,* June 2016.
68 IPART, *Review of prices for Hunter Water Corporation from 1 July 2016 to 30 June 2020, Water – Final Report*, June 2016.
69 Under this approach we continue to set maximum prices for each of the business' monopoly services. However, if the business and a large non-residential customer enter into an unregulated pricing agreement, that customer would not be subject to our determined prices.
70 If the parties do not enter into an unregulated agreement then the determined prices will apply.
71 Refer footnote 23.

IPART seeks comments on the following

36 Should we allow unregulated pricing agreements between WaterNSW and offtake customers? Why or why not?

37 If we do allow unregulated pricing agreements should there be any restrictions on these agreements?

A Background on WaterNSW's Murray River to Broken Hill Pipeline

In 2016 and 2017 the NSW Government issued directions to WaterNSW to construct, operate and maintain the Murray River to Broken Hill Pipeline (the Pipeline) to certain specifications. These directions are presented in Appendix C.

The purpose of the Pipeline is to connect Broken Hill to the Murray River to replace the Menindee Lakes as Essential Water's primary bulk water supply and deliver long term water security to the Broken Hill community. WaterNSW is proposing the Pipeline also provide bulk water to individual customers along several offtakes along the Pipeline.

The Pipeline has been designed to run along the Silver City Highway and transport bulk water from the Murray River in Wentworth to Essential Water's Mica Street Water Treatment Plant in Broken Hill. This represents a distance of 270km and an elevation of approximately 280m.

In October 2017 WaterNSW announced that it had appointed a consortium of John Holland, MPC Group and TRILITY to design, construct, operate and maintain the Pipeline:[72]

- The total cost of the design and construct contract was $467m (this contract includes some additional works that will be transferred to Essential Water and are not part of the Pipeline).
- The total cost of the operating and maintenance contract was $107.3m over 20 years.

Construction began in early 2018 and WaterNSW is projecting the Pipeline will be complete and ready for water delivery by December 2018. Table A.1 provides a summary of key figures reported in WaterNSW progress reports.

Table A.1 Summary of Pipeline progress reports

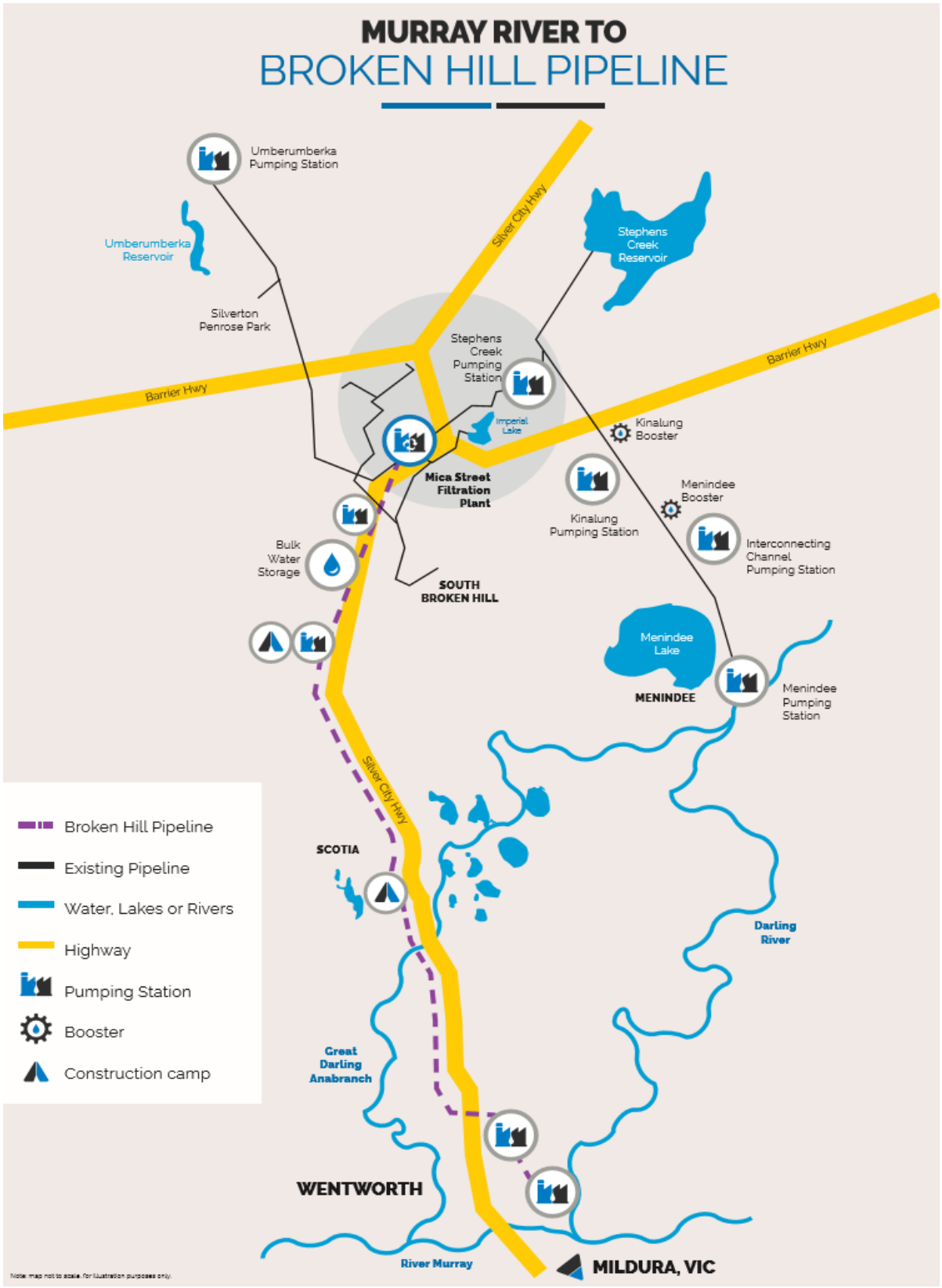
	Measure	April 2018	May 2018	June 2018	July 2018	Target
Local workforce	# of people	89	121	150	150	150
Aboriginal workforce	# of people	22	29	47	47	25
Trainees	# of people	-	15	42	48	-
Total hours worked	# of hours	187,048	290,823	423,355	566,279	-
Spend in local economies	$million	4.7	14	20	25.6	-
Pipe laid	km	55.3	102.24	173.5	239.8	270

Source: https://www.waternsw.com.au/projects/wentworth-to-broken-hill-pipeline/project-updates

A schematic representation of the Pipeline is shown in Figure A.1.

72 Available at: https://www.waternsw.com.au/about/newsroom/2017/htriver-murray-to-broken-hill-pipeline-contract-awarded

Figure A.1 Schematic representation of the Pipeline



B Matters to be considered by IPART under Section 15 of the IPART Act

In making determinations, IPART is required under section 15 of the IPART Act to have regard to the following matters (in addition to any other matters IPART considers relevant):

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).

C Government directions

This Appendix summarises the three NSW Government directions associated with this review and presents copies of these directions (in chronological order).

The following summarises the key elements of the directions:

1. Direction to the Board of WaterNSW to secure the water supply of Broken Hill – 21 November 2016. This direction requires WaterNSW to:
   - Construct, operate and maintain a pipeline from the Murray River to deliver low salinity water to the Mica Street Water Treatment Plant in Broken Hill, including any infrastructure necessary for operation. The pipeline is to generally run along the Silver City Highway.
   - Use best endeavours to ensure that supply from the pipeline, when used in conjunction with the current Broken Hill water supply infrastructure, can meet peak daily demand of 37.4 megalitres of water per day.
   - Endeavour to have the pipeline operational by December 2018 and ensure that the pipeline is operational before all surface water and the Lake Menindee groundwater source is exhausted.
   - Fund the capital costs of construction from within WaterNSW's existing resources or borrow the funds as required, recognising that IPART will be asked to allow WaterNSW to recover the total efficient cost associated with the ongoing operation of the pipeline, including the cost of capital.
   - Consult with various stakeholders and report on the progress of the project.
2. Direction to the Board of WaterNSW in relation to the construction of the Broken Hill pipeline – 31 August 2017. This Direction instructs WaterNSW to ensure that:
   - The minimum targets set in the NSW Infrastructure Skills Legacy Program are met for the construction of the pipeline to the extent possible (given the remote location and with relevant targets negotiated through the tender process).
   - Australian rolled steel is substantially used in construction of the pipeline, regardless of where the pipe is manufactured.
3. Direction to IPART under section 16A of the IPART Act – 19 April 2018.

- The Government (ie, the portfolio Minister) can issue directions for WaterNSW to complete projects in the public interest, which may not be in the shareholders' interests.73 To ensure this investment is not deemed imprudent, the Minister can direct IPART (with the Premier's approval) under section 16A of the IPART Act, to include in WaterNSW's maximum prices, the efficient costs of complying with the specified regulatory requirements.74 This can take the form of either:
  - a 'standing direction' (which applies whenever IPART makes a determination in relation to a particular government monopoly service), or
  - a 'one-off direction' (which applies when IPART makes a particular pricing determination).
- For this review, one ministerial direction pursuant to section 16A of the IPART Act (section 16A direction) applies. We are directed, when making determinations of pricing for the government monopoly services relating to the Murray River to Broken Hill pipeline, to include an amount or factor in our methodology representing the efficient cost of complying with the two section 20P directions issued to WaterNSW.

73 Typically through a direction given under section 20P of the *State Owned Corporations Act 1989* (NSW) (SOC Act).

74 Under Section 16A(3) of the IPART Act a specified requirement may only be a requirement imposed by or under a licence or authorisation, a requirement imposed by a ministerial direction under an Act, or some other requirement imposed by or under an Act or statutory instrument.

Figure C.1 Direction to the Board of WaterNSW to secure the water supply of Broken Hill – 21 November 2016

New South Wales

Direction to the Board of WaterNSW to secure the water supply of Broken Hill 2016

under the

State Owned Corporations Act 1989

I, Niall Blair, MLC, Minister for Lands and Water, with approval of the Treasurer, in pursuance of section 20P of the *State Owned Corporations Act 1989*, make the following direction to the Board of WaterNSW, being satisfied that because of exceptional circumstances, it is necessary to give the direction in the public interest.

Dated this 21st day of November, 2016.

[redacted]

Minister for Lands and Water

Explanatory note

This direction is made under section 20P of the *State Owned Corporations Act 1989*. The object of this direction is to require WaterNSW to arrange for the construction, operation and maintenance of a pipeline from the Murray River to Broken Hill along the Silver City Highway. This direction will ensure that the people of Broken Hill have long term water security.

Direction to the Board of WaterNSW to secure the water supply of Broken Hill 2016

under the

State Owned Corporations Act 1989

1 Name of Direction

This direction is the *Direction to the Board of WaterNSW to secure the water supply of Broken Hill 2016*.

2 Commencement

This direction commences on the day on which it is signed and will remain in force until it is revoked, either in whole or in part.

3 Direction

The Board of WaterNSW is directed to:

a) Arrange for the construction, operation and maintenance of a pipeline from the Murray River to deliver low salinity raw water to the existing Mica Street Water Treatment Plant in Broken Hill, including any associated infrastructure necessary for operation such as new or upgraded distribution pipelines or pump stations. The pipeline is to generally run along the Silver City Highway road easement.

b) Use best endeavours to ensure that supply from the pipeline, when used in conjunction with the current Broken Hill water supply infrastructure, can meet peak daily demand of up to 37.4 mega-litres of water per day.

c) Use best endeavours to make the pipeline operational by December 2018, and notwithstanding this, ensure that the pipeline is fully operational before all surface water and the Lake Menindee groundwater source available to the Broken Hill community are depleted.

d) Fund the capital costs for constructing the pipeline from within WaterNSW's existing resources or otherwise borrow the required funds, recognising that the Independent Pricing and Regulatory Tribunal will be asked by Government to allow WaterNSW to recover the total efficient cost associated with the ongoing operation of the pipeline, including the cost of capital.

e) Chair and regularly consult with a Project Consultative Committee established for the project involving representation from the Department of Primary Industries, Department of Premier and Cabinet, NSW Treasury, NSW Planning and Environment, Infrastructure NSW, Essential Energy and NSW Public Works.

f) Report on progress of the project to Infrastructure NSW under the High Profile, High Risk reporting framework.

Figure C.2 Direction to the Board of WaterNSW in relation to the construction of the Broken Hill pipeline – 31 August 2017

New South Wales

Direction to the Board of WaterNSW in relation to the construction of the Broken Hill pipeline 2017

under the

State Owned Corporations Act 1989

I, Niall Blair, MLC, Minister for Regional Water, with approval of the Treasurer, in pursuance of section 20P of the *State Owned Corporations Act 1989*, make the following direction to the Board of WaterNSW, being satisfied that because of exceptional circumstances it is necessary to give the direction in the public interest.

Dated this 31st day of August, 2017.

[redacted]

Minister for Regional Water

Explanatory note

This direction is made under section 20P of the *State Owned Corporations Act 1989*. The object of this direction is to require WaterNSW to ensure that the pipeline, the subject of the previous Direction to the Board of WaterNSW to secure the water supply of Broken Hill 2016, is constructed substantially of Australian rolled steel (irrespective of place of manufacture of the pipe) and the project meets the minimum targets of the NSW Infrastructure Skills Legacy Program, to the extent that is possible given the remote location of the project.

Direction to the Board of WaterNSW in relation to the construction of the Broken Hill pipeline 2017

under the

State Owned Corporations Act 1989

1 Name of Direction

This direction is the *Direction to the Board of WaterNSW in relation to the construction of the Broken Hill pipeline 2017*.

2 Commencement

This direction commences on the day on which it is signed and will remain in force until it is revoked, either in whole or in part.

3 Direction

The Board of WaterNSW is directed to ensure that:

a) the minimum targets set in the NSW Infrastructure Skills Legacy Program are met for the construction of the pipeline, in consultation with the Department of Industry to the extent possible given the remote location of the project and with relevant targets negotiated through the tender process; and

b) Australian rolled steel is substantially used in the construction of the pipeline, regardless of where the pipe is manufactured.

Figure C.3 Government direction under section 16A of the IPART Act – 19 April 2018

New South Wales

Direction to the Independent Pricing and Regulatory Tribunal in relation to the construction and operation of the Broken Hill pipeline 2018

under the

Independent Pricing and Regulatory Tribunal Act 1992

I, Niall Blair, MLC, Minister for Regional Water, with approval of the Premier, in pursuance of section 16A of the *Independent Pricing and Regulatory Tribunal Act 1992*, make the following direction to the Independent Pricing and Regulatory Tribunal.

Dated this 19th day of April, 2018.

[redacted]

The Hon. Niall Blair MLC
Minister for Regional Water

Explanatory note

This direction is made under section 16A of the *Independent Pricing and Regulatory Tribunal Act 1992*. The object of this direction is to require the Independent Pricing and Regulatory Tribunal, when making determinations of pricing for the government monopoly services relating to the Murray River to Broken Hill pipeline to include an amount or factor in its methodology representing the efficient cost of complying with the following two section 20P directions issued to Water NSW under the *State Owned Corporations Act 1989:* the first issued on 21 November 2016 to construct, operate and maintain the Murray River to Broken Hill pipeline and the second issued on 31 August 2017 to ensure that in constructing the Murray River to Broken Hill pipeline, the minimum targets set in the Government's Infrastructure Skills Legacy Program are met and that the pipeline is constructed substantially using Australian rolled steel.

Direction to the Independent Pricing and Regulatory Tribunal in relation to the construction and operation of the Broken Hill pipeline 2018

under the

Independent Pricing and Regulatory Tribunal Act 1992

1 Name of Direction

This direction is the *Direction to the Independent Pricing and Regulatory Tribunal in relation to the construction and operation of the Broken Hill pipeline 2018*.

2 Commencement

This direction commences on the day on which it is signed and will remain in force until it is revoked, either in whole or in part.

3 Direction

The Independent Pricing and Regulatory Tribunal is directed, when making determinations of pricing for the Services, to include an amount or factor in its methodology representing the efficient cost of complying with the Section 20P Directions.

4 Definitions

In this direction:

Section 20P Directions means the following directions issued to WaterNSW under section 20P of the *State Owned Corporations Act 1989*:

(a) the *Direction to the Board of WaterNSW to secure the water supply of Broken Hill 2016* dated 21 November 2016; and

(b) the *Direction to the Board of WaterNSW in relation to the construction of the Broken Hill pipeline 2017* dated 31 August 2017.

Services means the services that are:

(a) supplied by WaterNSW by means of or in connection with the Murray River to Broken Hill pipeline; and

(b) declared to be government monopoly services for the purposes of the *Independent Pricing and Regulatory Tribunal Act 1992*.

Glossary

2019 Determination period	The period to be set by IPART, from 1 July 2019 up to five years
Annual revenue requirement	The notional revenue requirement in each year of the determination period
Broken Hill Pipeline (the Pipeline)	The WaterNSW Murray River to Broken Hill pipeline
CPI	Consumer Price Index
Essential Water	Essential Energy's water business
GL	Gigalitre (one billion litres)
IPART	Independent Pricing and Regulatory Tribunal of NSW
IPART Act	*Independent Pricing and Regulatory Tribunal Act 1992* (NSW)
kL	Kilolitre (one thousand litres)
ML	Megalitre (one million litres)
NRR	Notional revenue requirement. Revenue requirement set by IPART that represent the efficient costs of providing the regulated service
NPV	Net Present Value
RAB	Regulatory asset base
Section 16A direction	Ministerial direction pursuant to section 16A of the IPART Act
Section 20P directions	Ministerial directions pursuant to section 20P of the SOC Act
SOC Act	*State Owned Corporations Act 1989* (NSW)
Target revenue	The revenue Essential Water generates from maximum prices set by IPART
WACC	Weighted average cost of capital