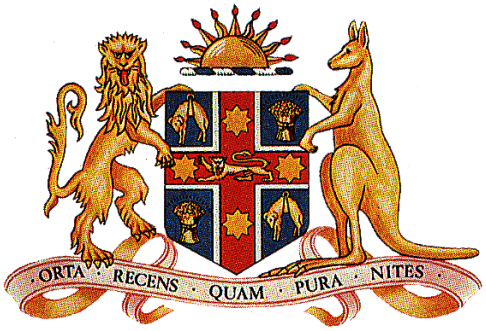

Government Gazette

of the State of

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Declared Dams Amendment Order (December) 2022

under the

Dams Safety Act 2015 and Interpretation Act 1987

Dams Safety NSW, in pursuance of section 5(1) of the *Dams Safety Act 2015* and section 43 (2) of the *Interpretation Act 1987* makes the following Order.

Dated 6 December 2022

Paul O'Connor
Chairperson, Dams Safety NSW

Explanatory note

Section 5 (1) of the *Dams Safety Act 2015* provides that Dams Safety NSW may, by order published in the Gazette, declare a dam or proposed dam to be a declared dam for the purposes of the Act.

Section 43(2) of the Acts Interpretation Act 1987 provides that, if an Act or statutory rule confers a power on any person or body to make an order (whether or not the order must be in writing), the power includes power to amend or repeal any order made in the exercise of that power.

This order amends the Declared Dams Order 2022 so that the dams in Schedule 1 to this Order are declared to be declared dams for the purposes of the Dams Safety Act 2015.

The dams in Schedule 2 to this Order were declared to be declared dams for the purposes of the Dams Safety Act 2015 by the Declared Dams Order 2022 (published in the NSW Government Gazette No. 358 of 5 August 2022).

This order amends the Declared Dams Order 2022 so that the dams in Schedule 2 to this Order are no longer declared to be declared dams for the purposes of the Dams Safety Act 2015.

Declared Dams Amendment Order (December) 2022

under the

Dams Safety Act 2015* and *Interpretation Act 1987

1 Name of Order

This Order is the *Declared Dams Amendment Order (December) 2022*.

2 Commencement

This Order commences on the day on which it is published in the NSW Government Gazette.

3 Amendment of Declared Dams Order 2022 to add declared dams and remove declared Dams

This Order amends the *Declared Dams Order 2022* (published in the NSW Government Gazette No. 358 of 5 August 2022) so that the dams in Schedule 1 to this Order are declared to be declared dams for the purposes of the *Dams Safety Act 2015* and so that the dams in Schedule 2 to this Order are no longer declared to be declared dams for the purposes of the *Dams Safety Act 2015*.

Schedule 1

Name of dam	Location of dam
Amalfi Park Detention Basin	Graham Avenue, Lurnea
Narrabri Brine Water Dam	Baan Baa

Schedule 2

Name of dam	Location of dam
Bulga Northern Tailings Dam A	Bulga
Comberton Grange Retarding Basin	Off-stream storage near Nowra
Delegate Retarding Basin	Delegate
Edmondson Park Jardine Drive Basin 12	Cabramatta Creek, Edmondson Park
Lemington Mine Tailings	Off-stream Storage near Warkworth
Lidcombe Basin No 6	Tributary of Haslams Creek, Lidcombe
Maules Creek Mine—MWD2	Maules Creek, Boggabri
Maules Creek Mine—RWD2	Maules Creek, Boggabri

RENEWABLE ENERGY ZONE (HUNTER-CENTRAL COAST) ORDER 2022

Under the

Electricity Infrastructure Investment Act 2020

I, Matthew Kean MP, Minister for Energy, make the following Order under section 19(1) of the Act.

Dated this 6 day of December 2022

Matthew Kean MP

Minister for Energy

NSW Government

RENEWABLE ENERGY ZONE (HUNTER-CENTRAL COAST) ORDER 2022

1. Name of Order

This Order is the *Renewable Energy Zone (Hunter-Central Coast) Order 2022.*

2. Commencement Date

This Order commences on the date that it is published in the Gazette.

3. Definitions

Unless otherwise defined, words and phrases defined in the Act have the same meaning in this Order.

Act means the *Electricity Infrastructure Investment Act 2020* (NSW).

Specified geographical area means the land identified as the 'Hunter-Central Coast Renewable Energy Zone Geographical Area' in Schedule 1 of this Order.

4. Declaration of the Hunter-Central Coast renewable energy zone

The Hunter-Central Coast renewable energy zone is hereby declared and comprises:

(a) the specified geographical area; and

(b) the network infrastructure specified in Schedule 2 of this Order.

5. Intended network capacity for the network infrastructure in the renewable energy zone

The intended network capacity for network infrastructure in the Hunter-Central Coast renewable energy zone is one gigawatt.

6. Hunter-Central Coast renewable energy zone infrastructure planner

The Minister has appointed the Energy Corporation of New South Wales as infrastructure planner for the Hunter-Central Coast renewable energy zone.

Schedule 1

1. Specified geographical area

The specified geographical area is the area identified as the 'Hunter-Central Coast Renewable Energy Zone Geographical Area' in Figure 1.

Figure 1: Map identifying the 'Hunter-Central Coast Renewable Energy Zone Geographical Area'

Schedule 2

Specified network infrastructure

1. All planned, new and existing network infrastructure in the specified geographical area is specified network infrastructure.
2. Despite anything in this Schedule 2, the Sydney Ring transmission network infrastructure project (as described in the most recent integrated system plan published by AEMO under the National Electricity Rules in June 2022) is not specified network infrastructure for the purposes of this Order.

IPART Independent Pricing and Regulatory Tribunal | NSW

Maximum prices for water and wastewater services supplied by Essential Energy in Broken Hill

Final Determination

November 2022

Water »

Tribunal Members

The Tribunal members for this review are:
Carmel Donnelly PSM, Chair
Deborah Cope
Sandra Gamble

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

Matthew Mansell (02) 9113 7770

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

Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders, past, present and emerging.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

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Contents

Part 1 Preliminary

1 Scope of this determination

This determination fixes the maximum prices, or sets methodologies for fixing the maximum prices, that Essential Energy may levy for the following services:

(1) Water Supply Services;

(2) Wastewater Services;

(3) Trade Waste Services; and

(4) Miscellaneous Customer Services,

(together, the **Monopoly Services**).

2 Commencement and term of this determination

(1) This determination commences on the later of:

(a) 1 January 2023; and

(b) the date that it is published in the NSW Government Gazette,

(**Commencement Date**).

(2) The maximum prices under this determination apply from the Commencement Date to 30 June 2026.

(3) The maximum prices under this determination prevailing at 30 June 2026 continue to apply beyond 30 June 2026 until this determination is revoked or replaced.

[Note: For the avoidance of doubt, the effect of clause 2 is that this determination will apply in respect of the Monopoly Services supplied on or after the Commencement Date, and the 2019 Determination will apply in respect of Monopoly Services supplied prior to the Commencement Date and within the term of the 2019 Determination.]

3 Replacement of the 2019 Determination

This determination replaces the 2019 Determination.

4 Maximum prices

The parts of this determination listed in Table 1 set out the maximum prices that Essential Energy may levy for supplying the Monopoly Services.

Table 1 Maximum prices

Part	Monopoly Services to which the part applies	Summary of maximum prices
Part 2	Water Supply Services	The maximum price that Essential Energy may levy for supplying the Water Supply Services to: (a) a Property that is connected to the Water Supply System - comprises a water service charge and a water usage charge;

Part	Monopoly Services to which the part applies	Summary of maximum prices
		(b) EW Pipeline **Property** means a Property which may access Untreated Water from the Menindee Pipeline or the Umberumberka Pipeline (or, in the event that the Menindee Pipeline is decommissioned, could access Untreated Water from the Menindee Pipeline immediately prior to it being decommissioned). (c) **Exempt Land** - comprises a water usage charge; and (d) an Unconnected Property - is zero.
Part 3	Wastewater Services	The maximum price that Essential Energy may levy for supplying Wastewater Services to: (a) a Property that is connected to the Wastewater System (except those Properties listed in subclause (b)) - comprises a wastewater service charge and a wastewater usage charge; (b) a Residential Property, Non-Residential Property served by one or more Common Meters in a Mixed Multi-Premises and an Unmetered Property - comprises a wastewater service charge; (c) EW Pipeline **Property** means a Property which may access Untreated Water from the Menindee Pipeline or the Umberumberka Pipeline (or, in the event that the Menindee Pipeline is decommissioned, could access Untreated Water from the Menindee Pipeline immediately prior to it being decommissioned). (d) **Exempt Land** - comprises a wastewater usage charge; and (e) an Unconnected Property - is zero.
Part 4	Trade Waste Services	Sets out the maximum price that Essential Energy may levy for supplying the following categories of Trade Waste Services: (a) Category 1 Trade Waste Discharge; (b) Category 1a Trade Waste Discharge; (c) Category 2 Trade Waste Discharge; and (d) Category 3 Trade Waste Discharge.
Part 5	Miscellaneous Customer Services	Sets out the maximum price that Essential Energy may levy for supplying the Miscellaneous Customer Services listed in Table 13.

5 Legislative background

5.1 IPART may set maximum prices for government monopoly services supplied by specified government agencies

Section 11(1)(a) of the IPART Act provides IPART with a standing reference for the determination of prices for government monopoly services supplied by a government agency specified in Schedule 1 to the IPART Act. Section 13A of the IPART Act provides that in making a pricing determination for a government monopoly service, IPART may either fix a maximum price or set a methodology for fixing a maximum price.

5.2 The Monopoly Services are government monopoly services

(1) The Monopoly Services are government monopoly services because they fall within the scope of the Order.

(2) The Order applies to Essential Energy by operation of section 53(1)(b) of the *Interpretation Act 1987* (NSW). In March 2011, Country Energy changed its name to Essential Energy under the *Energy Services Corporations Amendment (Change of Name) Regulation 2011* (NSW).

5.3 Essential Energy is specified in Schedule 1 to the IPART Act

IPART has a standing reference to set maximum prices for Essential Energy because Schedule 1 to the IPART Act specifies that Essential Energy is a government agency.

5.4 IPART has set methodologies to fix maximum prices for certain services

This determination fixes the maximum price for some services and sets a methodology for fixing the maximum price for other services. IPART's reasons for setting a methodology for fixing some maximum prices are set out in Part 6.

Part 2 Water Supply Services

6 Application of this part

(1) This part sets out the maximum prices that Essential Energy may levy for supplying Water Supply Services to a Property.

(2) Except for the charges in clause 7(2), the charges in this part apply in respect of Properties that are connected to the Water Supply System.

7 Maximum prices for Water Supply Services

(1) The maximum price that Essential Energy may levy for supplying Water Supply Services to a Property (other than Properties which are dealt with in clause 7(2)) for the applicable Period, is the amount calculated using the formula in Box 1.

Box 1 Maximum prices for supplying Water Supply Services to a Property (other than an Unconnected Property)

$$MP_{WSS} = SC_{WSS} + UC_{WSS}$$

Where:

MP_{WSS} means the maximum price that Essential Energy may levy for supplying Water Supply Services to a Property (other than an Unconnected Property) for the applicable Period;

SC_{WSS} means the water service charge calculated in accordance with clause 8; and

UC_{WSS} means the water usage charge calculated in accordance with clause 9.

(2) The maximum price that Essential Energy may levy for supplying Water Supply Services to:

(a) an Unconnected Property - is zero; and

(b) EW Pipeline **Property** means a Property which may access Untreated Water from the Menindee Pipeline or the Umberumberka Pipeline (or, in the event that the Menindee Pipeline is decommissioned, could access Untreated Water from the Menindee Pipeline immediately prior to it being decommissioned).

(c) **Exempt Land** - is the water usage charge for the applicable Period, calculated in accordance with clause 9.

8 Water service charge

8.1 Standard water service charge

Subject to clauses 8.2 and 8.3, the water service charge applicable to a Property (including a New Mining Customer Property but excluding a Mining Customer Property dealt with in clause 8.4) for the applicable Period is the sum of the water service charges in Table 2 for the applicable Meter size and applicable Period for each Meter that serves the Property.

[Note: clause 8.2 deems certain Properties to be served by a single 20mm Individual Meter, clause 8.3 apportions the water supply service charge between Properties that are served by one or more Common Meters and clause 8.4 sets a different water service charge for certain Mining Customer Properties.]

8.2 Certain Properties are deemed to have a single 20mm Individual Meter

For the purpose of clause 8.1, the following Properties are deemed to be served by a single 20mm Individual Meter:

(1) each Residential Property;

(2) each Non-Residential Property that is not an EW Pipeline Property or Mining Customer Property, is in a Mixed Multi-Premises and is served by one or more Common Meters; and

(3) each Unmetered Property.

[Note: A Non-Residential Property in a Multi-Premises that has an Individual Meter downstream of a Common Meter is served by that Individual Meter and not by the Common Meter, meaning the standard water service charge in clause 8.1 will apply to such a Property. See clause 20.5.]

8.3 Apportionment of water service charges between Properties served by one or more Common Meters

(1) This clause applies to a Property that is:

(a) served by one or more Common Meters;

(b) not an EW Pipeline Property or Mining Customer Property; and

(c) not deemed to be served by a single 20mm Individual Meter under clause 8.2.

[Note: A Non-Residential Property in a Multi-Premises that has an Individual Meter downstream of a Common Meter is served by that Individual Meter and not by the Common Meter, meaning this clause 8.3 will not apply to such a Property. See clause 20.5(2).]

(2) Subject to clause 8.3(3), the water service charge for each Common Meter that serves a Property to which this clause applies is:

(a) the water service charge for the Common Meter calculated in accordance with clause 8.1; less

(b) the sum of any water service charges applicable to any Individual Meters that are downstream of the Common Meter.

(3) Where, but for this clause 8.3(3), the application of clause 8.3(2) would result in a negative water service charge for the Common Meter, the water service charge applicable to the Properties served by the Common Meter is $0.

(4) Where clause 8.3(3) does not apply, the water service charge applicable to a Property to which this clause 8.3 applies is a portion, as reasonably determined by Essential Energy, of the total water service charges for each Common Meter that serves the Property as calculated in accordance with this part.

(5) The portion referred to in clause 8.3(4) must be determined by Essential Energy such that the sum of the portions for the Properties served by the Common Meter or Common Meters does not exceed the total water service charges for that Common Meter or those Common Meters.

[Note: clause 8.3(2) must be taken into account when considering the service charges for any Common Meters for the purposes of clauses 8.3(4) and 8.3(5).]

[Note: See clause 20.6(1)(c), including relevant note.]

8.4 Water service charge for certain Mining Customer Properties

The relevant water service charge in Table 3 for the applicable Period applies to each of the following Properties with one or more Individual Meters:

(1) Perilya Broken Hill Mining Customer Property; and

(2) CBH Resources Mining Customer Property,

9 Water usage charge

9.1 Standard water usage charge

The water usage charge applicable to a Property (except an EW Pipeline Property which is dealt with in clause 9.2) for the applicable Period, is the amount calculated using the formula in Box 2.

Box 2 Standard water usage charge

$$UC_{WSS} = [C_W \times V_W] + [C_{CW} \times V_{CW}] + [C_{UW} \times V_{UW}]$$

Where:

UC_{WSS} means the water usage charge applicable to a Property (other than an EW Pipeline Property) for the applicable Period;

C_W means the charge per kL of Treated Water in Table 4 for the applicable Period;

V_W means the volume (in kL) of Treated Water supplied to the Property in the applicable Period calculated in accordance with clause 9.3 or clause 9.4, as the case may be;

C_{CW} means the charge per kL of Chlorinated Water in Table 4 for the applicable Period;

V_{CW} means the volume (in kL) of Chlorinated Water supplied to the Property in the applicable Period calculated in accordance with clause 9.3 or clause 9.4, as the case may be;

C_{UW} means the charge per kL of Untreated Water for Residential Properties and Non-Residential Properties in Table 4 for the applicable Period;

V_{UW} means the volume (in kL) of Untreated Water supplied to the Residential Property or Non-Residential Property, as the case may be, in the applicable Period calculated in accordance with clause 9.3 or clause 9.4, as the case may be.

9.2 Water usage charge for EW Pipeline Properties

The water usage charge applicable to an EW Pipeline Property for the applicable Period, is the amount calculated using the formula in Box 3.

Box 3 Water usage charge for EW Pipeline Properties

$$UC_{WSS1} = C_{UWOP} \times V_{UWOP}$$

Where:

UC_{WSS1} means the water usage charge applicable to an EW Pipeline Property for the applicable Period;

C_{UWOP} means the charge per kL of Untreated Water for EW Pipeline Properties in Table 4 for the applicable Period;

V_{UWOP} means the volume (in kL) of Untreated Water supplied to the EW Pipeline Property in the applicable Period calculated in accordance with clause 9.3 or clause 9.4, as the case may be.

9.3 Measuring volume for Properties served by one or more Individual Meters and Unmetered Properties

(1) The volume of each type of water supplied to a Property served by one or more Individual Meters is the volume (in kL) measured by that Meter or Meters.

[Note: If a Meter Reading Period traverses two Periods, then the water usage charge is to be pro-rated in accordance with clause 20.6(3).]

(2) The volume of each type of water supplied to an Unmetered Property, is taken to be 300kL for the applicable Period.

9.4 Measuring volume for Properties served by one or more Common Meters

(1) Subject to clause 9.4(3), the volume of each type of water measured by any Common Meters that serve a Non-Residential Property is:

(a) the volume of that type of water as measured by the Common Meter or Common Meters; less

(b) the volume of that type of water measured by any Individual Meters that are downstream of the Common Meter or Common Meters.

[Note: If a Meter Reading Period traverses two Periods, then the water usage charge is to be pro-rated in accordance with clause 20.6(3).]

(2) The volume of each type of water supplied to a Residential Property that is served by one or more Common Meters is the volume (in kL) measured by that Meter or Meters.

(3) Where, but for this clause 9.4(3), the application of clause 9.4(1) would result in a negative volume measured by the Common Meter, the volume applicable to any Non-Residential Properties served by the Common Meter is 0kL.

(4) Where clause 9.4(3) does not apply, the volume of each type of water supplied to a Property that is served by one or more Common Meters, is a portion, as reasonably determined by Essential Energy, of the volume measured by the Common Meter or Common Meters that serve the Property.

(5) The portion referred to in clause 9.4(4) must be determined by Essential Energy such that the sum of the portions for the Properties served by the Common Meter or Common Meters, does not exceed the volume measured by that Common Meter or those Common Meters.

[Note: See clause 20.6(1)(c), including relevant note.]

[Note: Non-Residential Property in a Multi-Premises that has an Individual Meter downstream of a Common Meter is served by that Individual Meter and not by the Common Meter, meaning clause 9.3 determines the volume of water supplied to such Property. See clause 20.5(2).]

[Note: clause 9.4(1) must be taken into account when considering the volume measured by any Common Meters serving a Non-Residential Property for the purposes of clauses 9.4(4) and 9.4(5). For the avoidance of doubt, clauses 9.4(4) and 9.4(5) also apply to Residential Properties served by one or more Common Meters.]

Tables 2-4

Table 2 Water service charges for Meters servicing Properties (except for Properties referred to in clause 8.4)

Meter size	1 July 2022 to 30 June 2023 ($ per year)	1 July 2023 to 30 June 2024 ($ per year)	1 July 2024 to 30 June 2025 ($ per year)	1 July 2025 to 30 June 2026 ($ per year)
20mm	360.38	360.38 x CPI_1	360.38 x CPI_2	360.38 x CPI_3
25mm	563.09	563.09 x CPI_1	563.09 x CPI_2	563.09 x CPI_3
40mm	1,441.51	1,441.51 x CPI_1	1,441.51 x CPI_2	1,441.51 x CPI_3
50mm	2,252.36	2,252.36 x CPI_1	2,252.36 x CPI_2	2,252.36 x CPI_3
80mm	5,766.04	5,766.04 x CPI_1	5,766.04 x CPI_2	5,766.04 x CPI_3
100mm	9,009.43	9,009.43 x CPI_1	9,009.43 x CPI_2	9,009.43 x CPI_3
150mm	20,271.23	20,271.23 x CPI_1	20,271.23 x CPI_2	20,271.23 x CPI_3
Other Meter sizes	$\frac{(\text{Meter size})^2 \times (\text{20mm wastewater service charge for the applicable Period})}{400}$			

[Note: The water service charge is an annual charge. If it is being levied for any period that is less than a full financial year then it is to be pro-rated in accordance with clause 20.6(2).]

Table 3 Water service charges for Properties referred to in clause 8.4

	1 July 2022 to 30 June 2023 ($ per year)	1 July 2023 to 30 June 2024 ($ per year)	1 July 2024 to 30 June 2025 ($ per year)	1 July 2025 to 30 June 2026 ($ per year)
Perilya Broken Hill Mining Customer Property	2,531,290	2,531,290 x CPI_1	2,531,290 x CPI_2	2,531,290 x CPI_3
CBH Resources Mining Customer Property	610,583	610,583 x CPI_1	610,583 x CPI_2	610,583 x CPI_3

[Note: The water service charge is an annual charge. If it is being levied for any period that is less than a full financial year then it is to be pro-rated in accordance with clause 20.6(2).]

Table 4 Water usage charges

	1 July 2022 to 30 June 2023 ($ per kL)	1 July 2023 to 30 June 2024 ($ per kL)	1 July 2024 to 30 June 2025 ($ per kL)	1 July 2025 to 30 June 2026 ($ per kL)
Treated Water	1.98	1.98 x CPI_1	1.98 x CPI_2	1.98 x CPI_3
Chlorinated Water	1.54	1.60 x CPI_1	1.67 x CPI_2	1.73 x CPI_3
Untreated Water for Residential Properties and Non-Residential Properties	1.73	1.73 x CPI_1	1.73 x CPI_2	1.73 x CPI_3
Untreated Water for EW Pipeline Property	1.20	1.29 x CPI_1	1.38 x CPI_2	1.47 x CPI_3

Part 3 Wastewater Services

10 Application of this part

(1) This part sets out the maximum prices that Essential Energy may levy for supplying Wastewater Services to a Property.

(2) Except for the maximum prices in clause 11(2)(a) and 11(2)(c), the maximum prices in this part apply in respect of Properties that are connected to the Wastewater System.

11 Maximum prices for Wastewater Services

(1) The maximum price that Essential Energy may levy for supplying Wastewater Services to a Property (other than Properties that are dealt with in clause 11(2)) for the applicable Period is the amount calculated in accordance with Box 4.

Box 4 Maximum prices for Wastewater Services supplied to a Property (other than those dealt with in clause 11(2))

$$MP_{wws} = SC_{wws} + UC_{wws}$$

Where:

MP_{wws} means the maximum price that Essential Energy may levy for supplying Wastewater Services to a Property (other than Properties that are dealt with in clause 11(2)) for the applicable Period.

SC_{wws} means the wastewater service charge calculated in accordance with clause 12;

UC_{wws} means the wastewater usage charge calculated in accordance with clause 13.

(2) The maximum price that Essential Energy may levy for supplying Wastewater Services to:

(a) an Unconnected Property - is zero;

(b) A Residential Property, Non-Residential Property served by one or more Common Meters in a Mixed Multi-Premises or an Unmetered Property - is the wastewater service charge for the applicable Period calculated in accordance with clause 12.1(1); and

(c) EW Pipeline **Property** means a Property which may access Untreated Water from the Menindee Pipeline or the Umberumberka Pipeline (or, in the event that the Menindee Pipeline is decommissioned, could access Untreated Water from the Menindee Pipeline immediately prior to it being decommissioned).

(d) **Exempt Land** - is the wastewater usage charge for the applicable Period, calculated in accordance with clause 13.

[Note: Non-Residential Property in a Multi-Premises that has an Individual Meter downstream of a Common Meter is served by that Individual Meter and not by the Common Meter, and is to be treated as a Metered Non-Residential Property. See clause 20.5(2).]

12 Wastewater service charge

12.1 Wastewater service charge for Properties other than those served by one or more Common Meters in a Non-Residential Multi-Premises

The wastewater service charge that applies to a:

(1) Residential Property; Non-Residential Property served by one or more Common Meters in a Mixed Multi-Premises; or Unmetered Property is the charge in Table 5 for the applicable Period.

(2) Metered Non-Residential Property (other than a Mining Customer Property) is the sum of the applicable wastewater service charges in Table 6 for the applicable Period and applicable Meter size for each Individual Meter that serves the Property, multiplied by the Discharge Factor for that Property.

(3) Mining Customer Property with one or more Individual Meters is the wastewater service charge in Table 6 for a single 100mm Meter for the applicable Period.

[Note: The Discharge Factor for a Mining Customer Property is 100%.]

12.2 Wastewater service charge for a Property served by one or more Common Meters in a Non-Residential Multi-Premises

(1) Subject to clause 12.2(2), the wastewater service charge for each Common Meter that serves a Property in a Non-Residential Multi-Premises is:

(a) the total applicable wastewater service charges in Table 6 for the applicable Period and applicable Meter size for each Common Meter that serves the Property, less the wastewater service charges for any Individual Meters that are downstream of any Common Meters serving the Property; multiplied by

(b) the Discharge Factor for the Multi-Premises.

(2) Where, but for this clause 12.2(2), the application of clause 12.2(1) would result in a negative wastewater service charge for any Common Meter, the wastewater service charge applicable to the Properties served by the Common Meter is $0.

(3) Where clause 12.2(2) does not apply, the wastewater service charge applicable to a Property served by a Common Meter in a Non-Residential Multi-Premises is a portion, as reasonably determined by Essential Energy, of the total wastewater service charges for each Common Meter that serves the Property as calculated in accordance with this part.

(4) The portion referred to in clause 12.2(3) must be determined by Essential Energy such that the sum of the portions for the Properties served by the Common Meter or Common Meters does not exceed the total wastewater service charges for the Common Meter or Common Meters.

[Note: See clause 20.6(1)(c), including relevant note.]

[Note: A Non-Residential Property in a Multi-Premises that has an Individual Meter downstream of a Common Meter is served by that Individual Meter and not by the Common Meter, and is to be treated as a Metered Non-Residential Property , meaning the wastewater service charge for such a Property is dealt with under clause 12.1(2). See clause 20.5(2).]

[Note: clause 12.2(1) must be taken into account when considering the service charges for any Common Meters serving a Non-Residential Property for the purposes of clauses 12.2(3) and 12.2(4).]

13 Wastewater usage charge

13.1 Wastewater usage charge

The wastewater usage charge applicable to a Property for the applicable Period, is the amount calculated using the formula in Box 5.

Box 5 Wastewater usage charge

$$UC_{wws} = C_{wws} \times V_{wws} \times DF_{wws}$$

Where:

UC_{wws} means the maximum wastewater usage charge applicable to a Property for the applicable Period;

C_{wws} means the charge per kL of water in Table 7 for the applicable Period;

V_{wws} means the total volume (in kL) of water (Treated Water, Chlorinated Water, and Untreated Water, as applicable) supplied by Essential Energy to:

(a) a Property served by one or more Individual Meters, as measured by those Individual Meters; or

(b) a Property served by one or more Common Meters in a Non-Residential Multi-Premises, as calculated in accordance with clause 13.2,

as the case may be; and

DF_{wws} means the applicable Discharge Factor for the Property.

[Note: If a Meter Reading Period traverses two Periods, then the relevant charge is to be pro-rated in accordance with clause 20.6(3).]

13.2 Measuring volume for Properties served by one or more Common Meters in a Non-Residential Multi-Premises

(1) Subject to clause 13.2(2), the total volume of water measured by any Common Meters that serve a Property in a Non-Residential Multi-Premises is:

(a) the total volume (in kL) of water (Treated Water, Chlorinated Water, and Untreated Water, as applicable) as measured by the Common Meter or Common Meters; less

(b) the total volume (in kL) of water (Treated Water, Chlorinated Water, and Untreated Water, as applicable) as measured by any Individual Meters that are downstream of the Common Meter or Common Meters.

(2) Where, but for this clause 13.2(2), the application of clause 13.2(1) would result in a negative volume measured by the Common Meter, the volume applicable to the Properties served by the Common Meter is 0kL.

(3) Where clause 13.2(2) does not apply, the volume of each type of water supplied to a Property that is served by one or more Common Meters in a Non-Residential Multi-

Premises, is a portion, as reasonably determined by Essential Energy, of the volume measured by the Common Meter or Common Meters that serve the Property.

(4) The portion referred to in clause 13.2(3) must be determined by Essential Energy such that the sum of the portions for the Properties served by the Common Meter or Common Meters, does not exceed the volume measured by the Common Meter or Common Meters.

[Note: See clause 20.6(1)(c), including relevant note.]

[Note: A Non-Residential Property in a Multi-Premises that has an Individual Meter downstream of a Common Meter is served by that Individual Meter and not by the Common Meter. See clause 20.5(2).]

[Note: clause 13.2(1) must be taken into account when considering the volume measured by any Common Meters serving a Non-Residential Property for the purposes of clauses 13.2(3) and 13.2(4).]

Tables 5 – 7

Table 5 Wastewater service charges for a Residential Property; Non-Residential Property served by one or more Common Meters in a Mixed Multi-Premises and an Unmetered Property

Charge	1 July 2022 to 30 June 2023 ($ per year)	1 July 2023 to 30 June 2024 ($ per year)	1 July 2024 to 30 June 2025 ($ per year)	1 July 2025 to 30 June 2026 ($ per year)
Wastewater service charge	574.23	574.23 x CPI_1	574.23 x CPI_2	574.23 x CPI_3

[Note: The wastewater service charge set out in Table 5 includes a deemed usage component.]

[Note: The wastewater service charge is an annual charge. If it is being levied for any period that is less than a full financial year then it is to be pro-rated in accordance with clause 20.6(2).]

Table 6 Wastewater service charges for each Individual Meter serving a Metered Non-Residential Property (including a Mining Customer Property) and each Common Meter serving a Property in a Non-Residential Multi-Premises

Meter size	1 July 2022 to 30 June 2023 ($ per year)	1 July 2023 to 30 June 2024 ($ per year)	1 July 2024 to 30 June 2025 ($ per year)	1 July 2025 to 30 June 2026 ($ per year)
20mm	639.26	639.26 x CPI_1	639.26 x CPI_2	639.26 x CPI_3
25mm	998.84	998.84 x CPI_1	998.84 x CPI_2	998.84 x CPI_3
40mm	2,557.04	2,557.04 x CPI_1	2,557.04 x CPI_2	2,557.04 x CPI_3
50mm	3,995.38	3,995.38 x CPI_1	3,995.38 x CPI_2	3,995.38 x CPI_3
80mm	10,228.16	10,228.16 x CPI_1	10,228.16 x CPI_2	10,228.16 x CPI_3
100mm	15,981.50	15,981.50 x CPI_1	15,981.50 x CPI_2	15,981.50 x CPI_3
150mm	35,958.39	35,958.39 x CPI_1	35,958.39 x CPI_2	35,958.39 x CPI_3
Other Meter sizes	$\frac{(\text{Meter size})^2 \times (\text{20mm wastewater service charge for the applicable Period})}{400}$			

[Note: The prices in Table 6 assume the application of a Discharge Factor of 100%. The relevant Discharge Factor may vary from case to case as determined by Essential Energy for the relevant Property.]

[Note: The wastewater service charge is an annual charge. If it is being levied for any period that is less than a full financial year then it is to be pro-rated in accordance with clause 20.6(2).]

Table 7 Wastewater usage charges

Charge	1 July 2022 to 30 June 2023 ($ per kL)	1 July 2023 to 30 June 2024 ($ per kL)	1 July 2024 to 30 June 2025 ($ per kL)	1 July 2025 to 30 June 2026 ($ per kL)
Wastewater usage charge	1.41	1.41 x CPI_1	1.41 x CPI_2	1.41 x CPI_3

Part 4 Trade Waste Services

14 Application of this part

This part sets out the maximum prices that Essential Energy may levy for the following categories of Trade Waste Services:

(1) Category 1 Trade Waste Discharge;

(2) Category 1a Trade Waste Discharge;

(3) Category 2 Trade Waste Discharge; and

(4) Category 3 Trade Waste Discharge.

15 Maximum prices for Trade Waste Services

15.1 Category 1 Trade Waste Discharge

The maximum price that Essential Energy may levy for Category 1 Trade Waste Discharge for the applicable Period is the amount calculated using the formula in Box 6.

Box 6 Maximum price for Category 1 Trade Waste Discharge

$$TW_1 = C_1 + A_1 + T_1 + (TN_1 \times TNV_1)$$

Where:

TW_1 means the maximum price for Category 1 Trade Waste Discharge for the applicable Period;

C_1 means the applicable annual Trade Waste fee in Table 8 for the relevant Period;

A_1 means the Trade Waste discharge application fee in Table 8 for the relevant Period (applies per application to discharge Trade Waste into the Wastewater System);

T_1 means the Trade Waste reinspection fees in Table 8 for the relevant Period (applies per reinspection);

TN_1 means the total non-compliant Trade Waste usage charges in Table 8 for the relevant Period (applies where appropriate pre-treatment equipment has not been installed or maintained as reasonably determined by Essential Energy); and

TNV_1 means the total volume (in kL) of non-compliant Trade Waste usage.

15.2 Category 1a Trade Waste Discharge

The maximum price that Essential Energy may levy for Category 1a Trade Waste Discharge for the applicable Period is the amount calculated using the formula in Box 7.

Box 7 Maximum price for Category 1a Trade Waste Discharge

$$TW_{1A} = C_{1A} + A_{1A} + T_{1A} + (TN_{1A} \times TNV_{1A})$$

Where:

TW_{1A} means the maximum price that Essential Energy may levy for Category 1a Trade Waste Discharge for the applicable Period;

C_{1A} means the applicable annual Trade Waste fee in Table 9 for the relevant Period;

A_{1A} means the Trade Waste discharge application fee in Table 9 for the relevant Period (applies per application to discharge Trade Waste into the Wastewater System);

T_{1A} means the Trade Waste reinspection fees in Table 9 for the relevant Period (applies per reinspection);

TN_{1A} means the total non-compliant Trade Waste usage charges in Table 9 for the relevant Period (applies where appropriate pre-treatment equipment has not been installed or maintained as reasonably determined by Essential Energy); and

TNV_{1A} means the total volume (in kL) of non-compliant Trade Waste usage.

15.3 Category 2 Trade Waste Discharge

The maximum price that Essential Energy may levy for Category 2 Trade Waste Discharge for the applicable Period is the amount calculated using the formula in Box 8.

Box 8 Maximum price for Category 2 Trade Waste Discharge

$$TW_2 = C_2 + A_2 + T_2 + (TN_2 \times TNV_2) + (FWD \times B) + (U_2 \times V_2)$$

Where:

TW_2 means the maximum price that Essential Energy may levy for Category 2 Trade Waste Discharge for the applicable Period;

C_2 means the applicable annual Trade Waste fee in Table 10 for the relevant Period;

A_2 means the Trade Waste discharge application fee in Table 10 for the relevant Period (applies per application to discharge Trade Waste into the Wastewater System);

T_2 means the Trade Waste reinspection fees in Table 10 for the relevant Period (applies per reinspection);

TN_2 means the total non-compliant Trade Waste usage charges in Table 10 for the relevant Period (applies where appropriate pre-treatment equipment has not been installed or maintained as reasonably determined by Essential Energy);

TNV_2 means the total volume (in kL) of non-compliant Trade Waste usage;

FWD means the annual food waste disposal charge in Table 10 for the relevant Period;

B means:

(a) in the case of a hospital, nursing home or other eligible facility in which the food waste disposal unit is installed - the number of beds in that facility;

(b) in any other case – 0;

U_2 means the compliant Trade Waste usage charge in Table 10 for the relevant Period; and

V_2 means the Volume of Liquid Trade Waste discharged into the Wastewater System.

15.4 Maximum prices for Category 3 Trade Waste Discharge

The maximum price that Essential Energy may levy for Category 3 Trade Waste Discharge for the applicable Period is the amount calculated using the formula in Box 9.

Box 9 Maximum price for Category 3 Trade Waste Discharge

$TW_3 = C_3 + A_3 + T_3 + MN + PH + BOD + M$Where:

TW_3 means the maximum price that Essential Energy may levy for Category 3 Trade Waste Discharge for the applicable Period;

C_3 means the applicable annual Trade Waste fee in Table 11 for the relevant Period;

A_3 means the Trade Waste discharge application fee in Table 11 for the relevant Period (applies per application to discharge Trade Waste into the Wastewater System);

T_3 means the Trade Waste reinspection fees in Table 11 for the relevant Period (applies per reinspection);

MN means the total non-compliant excess mass charges in Table 11 for the relevant Period (applies if there is a non-compliance with the approved concentration limits of substances specified in Essential Energy's approval conditions or the acceptance criterion listed in the Trade Waste Policy);

PH means the total charges in Table 11 for exceeding approved pH range for the relevant Period (applies where the approved pH range is exceeded);

BOD means the total charges in Table 11 for exceeding approved biochemical oxygen demand (**BOD**) range for the relevant Period (applies where the approved maximum concentration of BOD has been exceeded on two or more occasions in the applicable Period); and

M means the total applicable excess mass based charges, calculated under the Trade Waste Policy using the charges set out in Table 12 for the relevant Period.

Tables 8-12

[Note: the annual charges in Tables 8-11 must be pro-rated in accordance with clause 20.6(2) if they are to be levied for any period that is less than a full financial year.]

Table 8 Category 1 Trade Waste Discharge Fees and Charges

Fees and Charges	1 July 2022 to 30 June 2023	1 July 2023 to 30 June 2024	1 July 2024 to 30 June 2025	1 July 2025 to 30 June 2026
Annual Trade Waste fee (does not apply to a Mining Customer) (C_1) ($ per year)	105.58	105.58 x CPI_1	105.58 x CPI_2	105.58 x CPI_3
Annual Trade Waste fee per operating mine which discharges Trade Waste (applies to a Mining Customer) (C_1) ($ per year)	1,769.58	1,769.58 x CPI_1	1,769.58 x CPI_2	1,769.58 x CPI_3
Trade Waste discharge application fee (A_1) ($)	260.65	260.65 x CPI_1	260.65 x CPI_2	260.65 x CPI_3
Trade Waste reinspection fee (T_1) ($)	96.78	96.78 x CPI_1	96.78 x CPI_2	96.78 x CPI_3
Non-compliant Trade Waste usage charge (TN_1) ($ per kL)	0.79	0.99 x CPI_1	1.19 x CPI_2	1.39 x CPI_3

Table 9 Category 1a Trade Waste Discharge Fees and Charges

Fees and Charges	1 July 2022 to 30 June 2023	1 July 2023 to 30 June 2024	1 July 2024 to 30 June 2025	1 July 2025 to 30 June 2026
Annual Trade Waste fee (does not apply to a Mining Customer) (C_{1A}) ($ per year)	105.58	105.58 x CPI_1	105.58 x CPI_2	105.58 x CPI_3
Annual Trade Waste fee per operating mine which discharges Trade Waste (applies to a Mining Customer) (C_{1A}) ($ per year)	1,769.58	1,769.58 x CPI_1	1,769.58 x CPI_2	1,769.58 x CPI_3
Trade Waste discharge application fee (A_{1A}) ($)	260.65	260.65 x CPI_1	260.65 x CPI_2	260.65 x CPI_3
Trade Waste reinspection fee (T_{1A}) ($)	96.78	96.78 x CPI_1	96.78 x CPI_2	96.78 x CPI_3

Fees and Charges	1 July 2022 to 30 June 2023	1 July 2023 to 30 June 2024	1 July 2024 to 30 June 2025	1 July 2025 to 30 June 2026
Non-compliant Trade Waste usage charge (TN_{1A}) ($ per kL)	0.79	0.99 x CPI_1	1.19 x CPI_2	1.39 x CPI_3

Table 10 Category 2 Trade Waste Discharge Fees and Charges

Fees and Charges	1 July 2022 to 30 June 2023	1 July 2023 to 30 June 2024	1 July 2024 to 30 June 2025	1 July 2025 to 30 June 2026
Annual Trade Waste fee (does not apply to a Mining Customer) (C_2)($ per year)	212.26	212.26 x CPI_1	212.26 x CPI_2	212.26 x CPI_3
Annual Trade Waste fee per operating mine which discharges Trade Waste (applies to a Mining Customer) (C_2)($ per year)	1,769.58	1,769.58 x CPI_1	1,769.58 x CPI_2	1,769.58 x CPI_3
Trade Waste discharge application fee (A_2) ($)	260.65	260.65 x CPI_1	260.65 x CPI_2	260.65 x CPI_3
Trade Waste reinspection fee (T_2) ($)	96.78	96.78 x CPI_1	96.78 x CPI_2	96.78 x CPI_3
Non-compliant Trade Waste usage charge (TN_2) ($ per kL)	7.26	9.07 x CPI_1	10.89 x CPI_2	12.71 x CPI_3
Annual food waste disposal charge (FWD) ($ per year)	32.99	32.99 x CPI_1	32.99 x CPI_2	32.99 x CPI_3
Compliant Trade Waste usage charge (U_2) ($ per kL)	0.79	0.99 x CPI_1	1.19 x CPI_2	1.39 x CPI_3

Table 11 Category 3 Trade Waste Discharge Fees and Charges

Fees and Charges	1 July 2022 to 30 June 2023	1 July 2023 to 30 June 2024	1 July 2024 to 30 June 2025	1 July 2025 to 30 June 2026
Annual Trade Waste fee for a customer (does not apply to a Mining Customer) (C_3) ($ per year)	710.48	710.48 x CPI_1	710.48 x CPI_2	710.48 x CPI_3
Annual Trade Waste fee per operating mine which discharges Trade Waste (applies to a Mining Customer) (C_3) ($ per year)	1,769.58	1,769.58 x CPI_1	1,769.58 x CPI_2	1,769.58 x CPI_3
Trade Waste discharge application fee (A_3) ($)	260.65	260.65 x CPI_1	260.65 x CPI_2	260.65 x CPI_3

Fees and Charges	1 July 2022 to 30 June 2023	1 July 2023 to 30 June 2024	1 July 2024 to 30 June 2025	1 July 2025 to 30 June 2026
Trade Waste reinspection fee (T_3) ($)	96.78	96.78 x CPI_1	96.78 x CPI_2	96.78 x CPI_3
Non-compliant excess mass charge (*MN*)		As per the Trade Waste Policy		
Charge for exceeding approved pH range (*pH*)		As per the Trade Waste Policy		
Charge for exceeding approved BOD range (*BOD*)		As per the Trade Waste Policy		

Table 12 Category 3 Trade Waste Discharge Excess Mass Charges

Pollutant	1 July 2022 to 30 June 2023 ($ per kg)	1 July 2023 to 30 June 2024 ($ per kg)	1 July 2024 to 30 June 2025 ($ per kg)	1 July 2025 to 30 June 2026 ($ per kg)
Acid demand, pH>10	0.392	0.490 x CPI_1	0.588 x CPI_2	0.686 x CPI_3
Alkali demand, pH<7	0.392	0.490 x CPI_1	0.588 x CPI_2	0.686 x CPI_3
Aluminium	0.392	0.490 x CPI_1	0.588 x CPI_2	0.686 x CPI_3
Ammonia (as Nitrogen)	1.197	1.496 x CPI_1	1.795 x CPI_2	2.094 x CPI_3
Arsenic	39.435	49.294 x CPI_1	59.153 x CPI_2	69.011 x CPI_3
Barium	19.415	24.269 x CPI_1	29.123 x CPI_2	33.977 x CPI_3
Biochemical Oxygen Demand (BOD)	0.392	0.490 x CPI_1	0.588 x CPI_2	0.686 x CPI_3
Boron	0.392	0.490 x CPI_1	0.588 x CPI_2	0.686 x CPI_3
Bromine	7.849	9.811 x CPI_1	11.773 x CPI_2	13.735 x CPI_3
Cadmium	29.428	29.428 x CPI_1	29.428 x CPI_2	29.428 x CPI_3
Chloride	Nil	Nil	Nil	Nil
Chlorinated hydrocarbons	19.415	24.269 x CPI_1	29.123 x CPI_2	33.977 x CPI_3
Chlorinated phenolic compounds	786.258	982.822 x CPI_1	1179.387 x CPI_2	1375.951 x CPI_3
Chlorine	0.822	1.027 x CPI_1	1.233 x CPI_2	1.438 x CPI_3
Chromium	13.189	16.486 x CPI_1	19.784 x CPI_2	23.081 x CPI_3
Cobalt	8.168	10.210 x CPI_1	12.252 x CPI_2	14.294 x CPI_3
Copper	8.168	10.210 x CPI_1	12.252 x CPI_2	14.294 x CPI_3
Cyanide	39.435	49.294 x CPI_1	59.153 x CPI_2	69.011 x CPI_3
Fluoride	1.942	2.427 x CPI_1	2.913 x CPI_2	3.398 x CPI_3
Formaldehyde	0.822	1.027 x CPI_1	1.233 x CPI_2	1.438 x CPI_3
Grease and oil (total)	0.703	0.878 x CPI_1	1.054 x CPI_2	1.230 x CPI_3
Herbicides/defoliants	393.125	491.406 x CPI_1	589.687 x CPI_2	687.968 x CPI_3
Iron	0.822	1.027 x CPI_1	1.233 x CPI_2	1.438 x CPI_3
Lead	19.415	24.269 x CPI_1	29.123 x CPI_2	33.977 x CPI_3
Lithium	3.944	4.929 x CPI_1	5.915 x CPI_2	6.901 x CPI_3

Pollutant	1 July 2022 to 30 June 2023 ($ per kg)	1 July 2023 to 30 June 2024 ($ per kg)	1 July 2024 to 30 June 2025 ($ per kg)	1 July 2025 to 30 June 2026 ($ per kg)
Manganese	3.944	4.929 x CPI_1	5.915 x CPI_2	6.901 x CPI_3
Mercaptans	39.435	49.294 x CPI_1	59.153 x CPI_2	69.011 x CPI_3
Mercury	1,310.434	1,638.043 x CPI_1	1,965.651 x CPI_2	2,293.260 x CPI_3
Methylene blue active substances (MBAS)	0.392	0.490 x CPI_1	0.588 x CPI_2	0.686 x CPI_3
Molybdenum	0.392	0.490 x CPI_1	0.588 x CPI_2	0.686 x CPI_3
Nickel	13.189	16.486 x CPI_1	19.784 x CPI_2	23.081 x CPI_3
Nitrogen (Total Kjedahl Nitrogen)	0.102	0.128 x CPI_1	0.153 x CPI_2	0.179 x CPI_3
Organoarsenic compounds	393.125	491.406 x CPI_1	589.687 x CPI_2	687.968 x CPI_3
Pesticides general (excludes organochlorines and organophosphates)	393.125	491.406 x CPI_1	589.687 x CPI_2	687.968 x CPI_3
Petroleum hydrocarbons (non-flammable)	1.316	1.645 x CPI_1	1.974 x CPI_2	2.303 x CPI_3
Phenolic compounds (non-chlorinated)	3.944	4.929 x CPI_1	5.915 x CPI_2	6.901 x CPI_3
Phosphorus (Total)	0.822	1.027 x CPI_1	1.233 x CPI_2	1.438 x CPI_3
Polynuclear aromatic hydrocarbons (PAH)	8.168	10.210 x CPI_1	12.252 x CPI_2	14.294 x CPI_3
Selenium	27.622	34.527 x CPI_1	41.432 x CPI_2	48.338 x CPI_3
Silver	0.635	0.793 x CPI_1	0.952 x CPI_2	1.110 x CPI_3
Sulphate	0.077	0.096 x CPI_1	0.115 x CPI_2	0.134 x CPI_3
Sulphide	0.822	1.027 x CPI_1	1.233 x CPI_2	1.438 x CPI_3
Sulphite	0.877	1.097 x CPI_1	1.316 x CPI_2	1.535 x CPI_3
Suspended Solids (SS)	0.498	0.623 x CPI_1	0.747 x CPI_2	0.872 x CPI_3
Thiosulphate	0.136	0.170 x CPI_1	0.204 x CPI_2	0.238 x CPI_3
Tin	3.944	4.929 x CPI_1	5.915 x CPI_2	6.901 x CPI_3
Total Dissolved Solids (TDS)	0.026	0.032 x CPI_1	0.038 x CPI_2	0.045 x CPI_3
Uranium	3.944	4.929 x CPI_1	5.915 x CPI_2	6.901 x CPI_3
Zinc	8.036	10.045 x CPI_1	12.054 x CPI_2	14.063 x CPI_3

Part 5 Miscellaneous Customer Services

16 Application of this part

This part sets out the maximum prices that Essential Energy may levy for Miscellaneous Customer Services.

17 Maximum prices for Miscellaneous Customer Services

(1) The maximum prices that Essential Energy may levy for supplying Miscellaneous Customer Services is the corresponding charge for each service specified in Table 13 for the applicable Period.

(2) Where no maximum price is specified in Table 13 for supplying a Miscellaneous Customer Service, the maximum price that Essential Energy may levy for supplying such a service is $0.

Table 13

Table 13 Maximum prices for Miscellaneous Customer Services

No	Miscellaneous Customer Services	1 July 2022 to 30 June 2023 ($ per service)	1 July 2023 to 30 June 2024 ($ per service)	1 July 2024 to 30 June 2025 ($ per service)	1 July 2025 to 30 June 2026 ($ per service)
1	**Conveyancing certificate** Statement of outstanding charges a) Full certificate with Meter read b) Updated Meter read request (special Meter read) c) Full certificate with history search d) Urgent full certificate with Meter read (within 48 hours)	 81.22 60.87 142.98 140.77	 81.22 x CPI_1 60.87 x CPI_1 142.98 x CPI_1 140.77 x CPI_1	 81.22 x CPI_2 60.87 x CPI_2 142.98 x CPI_2 140.77 x CPI_2	 81.22 x CPI_3 60.87 x CPI_3 142.98 x CPI_3 140.77 x CPI_3
2	**Meter test** Refunded if Meter is ± 3%	84.42	84.42 x CPI_1	84.42 x CPI_2	84.42 x CPI_3
3	**Drainage diagram**	23.81	23.81 x CPI_1	23.81 x CPI_2	23.81 x CPI_3
4	**Plumbing inspection**	39.38	39.38 x CPI_1	39.38 x CPI_2	39.38 x CPI_3
5	**Plumbers application**	42.07	42.07 x CPI_1	42.07 x CPI_2	42.07 x CPI_3
6	**Site inspection for water and wastewater**	135.27	135.27 x CPI_1	135.27 x CPI_2	135.27 x CPI_3
7	**Statement of available water pressure**	195.76	195.76 x CPI_1	195.76 x CPI_2	195.76 x CPI_3
8	**Building plan approval – extension**	38.00	38.00 x CPI_1	38.00 x CPI_2	38.00 x CPI_3
9	**Building plan approval – new connection**	57.42	57.42 x CPI_1	57.42 x CPI_2	57.42 x CPI_3
10	**Fire service application**	100.41	100.41 x CPI_1	100.41 x CPI_2	100.41 x CPI_3
11	**Relocation/increase in size of water service** (tapping fee)	97.23	97.23 x CPI_1	97.23 x CPI_2	97.23 x CPI_3
12	**Backflow prevention device testing and certification** (per hour plus materials)	81.38	81.38 x CPI_1	81.38 x CPI_2	81.38 x CPI_3
13	**Install water service** a) 20mm service up to 3 metres b) 20mm service over 3 metres and less than 30 metres c) All others	 833.64 2,151.21 By quote	 833.64 x CPI_1 2,151.21 x CPI_1 By quote	 833.64 x CPI_2 2,151.21 x CPI_2 By quote	 833.64 x CPI_3 2,151.21 x CPI_3 By quote
14	**Alter existing water service** a) Actual cost b) Relocate existing service	 By quote By quote	 By quote By quote	 By quote By quote	 By quote By quote
15	**Downgrade Meter size** a) 25mm to 20mm b) All others	 107.18 By quote	 107.18 x CPI_1 By quote	 107.18 x CPI_2 By quote	 107.18 x CPI_3 By quote
16	**Repair damaged water service** a) First repair within 5 year period b) Second and subsequent repairs (per hour plus materials)	 Nil 107.18	 Nil 107.18 x CPI_1	 Nil 107.18 x CPI_2	 Nil 107.18 x CPI_3
17	**Rectification of illegal service**	260.65	260.65 x CPI_1	260.65 x CPI_2	260.65 x CPI_3
18	**Replace damaged water Meter** a) First replacement in a 5 year period	 Nil	 Nil	 Nil	 Nil

No	Miscellaneous Customer Services	1 July 2022 to 30 June 2023 ($ per service)	1 July 2023 to 30 June 2024 ($ per service)	1 July 2024 to 30 June 2025 ($ per service)	1 July 2025 to 30 June 2026 ($ per service)
	b) 20mm	125.37	125.37 x CPI_1	125.37 x CPI_2	125.37 x CPI_3
	c) 25mm	247.46	247.46 x CPI_1	247.46 x CPI_2	247.46 x CPI_3
	d) 32mm	359.63	359.63 x CPI_1	359.63 x CPI_2	359.63 x CPI_3
	e) 40mm	866.63	866.63 x CPI_1	866.63 x CPI_2	866.63 x CPI_3
	f) 50mm	1,081.10	1,081.10 x CPI_1	1,081.10 x CPI_2	1,081.10 x CPI_3
	g) 80mm	1,187.78	1,187.78 x CPI_1	1,187.78 x CPI_2	1,187.78 x CPI_3
	h) 100mm or greater	By quote	By quote	By quote	By quote
19	**Water service disconnection**				
	a) First disconnect within 1 year period	Nil	Nil	Nil	Nil
	b) Capping	104.54	104.54 x CPI_1	104.54 x CPI_2	104.54 x CPI_3
	c) 20mm to 25mm	174.88	174.88 x CPI_1	174.88 x CPI_2	174.88 x CPI_3
	d) Greater than 25mm	By quote	By quote	By quote	By quote
	e) Bitumen repairs ($ per metre) (minimum 1 metre)	20.35	20.35 x CPI_1	20.35 x CPI_2	20.35 x CPI_3
20	**Water service reconnection**				
	a) First reconnect within 1 year period	Nil	Nil	Nil	Nil
	b) Un-capping	112.18	112.18 x CPI_1	112.18 x CPI_2	112.18 x CPI_3
	c) 20mm to 25mm	188.07	188.07 x CPI_1	188.07 x CPI_2	188.07 x CPI_3
	d) Greater than 25mm	By quote	By quote	By quote	By quote
	e) Bitumen repairs ($ per metre) (minimum 1 metre)	20.35	20.35 x CPI_1	20.35 x CPI_2	20.35 x CPI_3
21	**Asset location**				
	a) Major or critical infrastructure (per hour)	107.18	107.18 x CPI_1	107.18 x CPI_2	107.18 x CPI_3
	b) Minor or non-critical initial location	Nil	Nil	Nil	Nil
	c) Reinspect asset location (per hour)	107.18	107.18 x CPI_1	107.18 x CPI_2	107.18 x CPI_3
22	**Relocate existing stop valve or hydrant**	By quote	By quote	By quote	By quote
23	**Replace water main before customer installations**	By quote	By quote	By quote	By quote
24	**Standpipe hire**				
	a) Monthly (minimum charge)	34.64	34.64 x CPI_1	34.64 x CPI_2	34.64 x CPI_3
	b) Annually	415.72	415.72 x CPI_1	415.72 x CPI_2	415.72 x CPI_3
	c) Water usage charges ($ per kL)				
	i. Treated	1.98	1.98 x CPI_1	1.98 x CPI_2	1.98 x CPI_3
	ii. Untreated	1.76	1.76 x CPI_1	1.76 x CPI_2	1.76 x CPI_3
25	**Personal service of final warning notice**	23.70	23.70 x CPI_1	23.70 x CPI_2	23.70 x CPI_3
26	**Water reconnection – after restrictions**				
	a) During business hours	102.28	102.28 x CPI_1	102.28 x CPI_2	102.28 x CPI_3
	b) Outside business hours	141.87	141.87 x CPI_1	141.87 x CPI_2	141.87 x CPI_3

Part 6 Statement of reasons for setting methodologies

18 Legislative framework

Under section 13A(2) of the IPART Act, IPART may not choose to make a determination that involves setting the methodology for fixing a maximum price, unless IPART is of the opinion that it is impractical to make a determination directly fixing the maximum price. If IPART makes a determination that involves setting the methodology for fixing a maximum price then it must include in its determination a statement of reasons as to why it chose to set a methodology (see section 13A(3) of the IPART Act).

19 Statement of reasons

19.1 Methodology for Water Supply Services

IPART has set a methodology for fixing the maximum price for Water Supply Services in Part 2. This is because the cost of providing Water Supply Services depends on a number of variables such as the volume of water supplied to a Property. It is impractical to make a determination directly fixing a maximum price for Water Supply Services.

19.2 Methodology for Wastewater Services

IPART has set a methodology for fixing the maximum price for Wastewater Services in Part 3. This is because the cost of providing Wastewater Services depends on a number of variables such as the volume of wastewater discharged from a Property. It is impractical to make a determination directly fixing a maximum price for Wastewater Services.

19.3 Methodology for Trade Waste charges

IPART has set methodologies for fixing the maximum price for Trade Waste Services in Part 4. This is because the cost of providing Trade Waste Services depends on a number of variables and is different for each category of customer. For example, applicable fees and the usage charge may be different for each category of customer. In terms of Category 2 Trade Waste Discharge, the number of beds in the facility in which the food waste disposal unit is installed may also vary.

Part 7 Definitions and interpretation

20 Interpretation

20.1 General provisions

In this determination, unless the contrary intention appears:

(1) headings are for convenience only and do not affect the interpretation of this determination;

(2) a reference to a part, clause, table or box is a reference to a part of, clause of, table in or box in, this determination unless otherwise indicated;

(3) a construction that would promote the purpose or object expressly or impliedly underlying the IPART Act is to be preferred to a construction that would not promote that purpose or object;

(4) words importing the singular include the plural and vice versa;

(5) a reference to a law or statute includes regulations, rules, codes and other instruments under it and consolidations, amendments, re-enactments or replacements of them;

(6) where a word is defined, other grammatical forms of that word have a corresponding meaning;

(7) a reference to a financial year is a reference to a period of 12 months beginning on 1 July and ending on the following 30 June;

(8) a reference to a person includes a reference to the person's executors, administrators, successors, substitutes (including, but not limited to, persons taking by novation), replacements and assigns; and

(9) a reference to a body, whether statutory or not, which ceases to exist; or whose powers or functions are transferred to another body, is a reference to the body which replaces it or which substantially succeeds to its powers or functions.

20.2 Explanatory notes and amendment notices

(1) Explanatory notes do not form part of this determination, but in the case of uncertainty may be relied on for interpretation purposes.

(2) Under section 32 of the IPART Act, IPART may amend this determination to correct a minor, obvious, clerical or administrative error by publishing a notice in the NSW Government Gazette.

20.3 Maximum prices exclusive of GST

(1) Maximum prices specified in this determination do not include GST.

(2) For the avoidance of doubt, where GST is lawfully applied to maximum prices set out in this determination, the resulting GST inclusive price is consistent with this determination.

20.4 Rounding Rule

(1) Any maximum price calculated in accordance with this determination is to be rounded to the nearest whole cent.

(2) For the purposes of rounding a maximum price under clause 20.4(1), any amount that is a multiple of 0.5 cents (but not a multiple of 1 cent), is to be rounded up to the nearest whole cent.

(3) The CPI multipliers calculated under clause 21.1 are to be rounded to three decimal places before adjusting a maximum price for inflation.

(4) For the purposes of rounding the CPI multipliers under clause 20.4(3), any amount that is a multiple of 0.0005 (but not a multiple of 0.001) is to be rounded up to three decimal places.

20.5 Meters that serve a Property

(1) Where a Property is deemed to have a single 20mm Individual Meter under clause 8.2, for the purpose of this determination, only that deemed Meter is taken to serve the Property.

(2) Where a Non-Residential Property has one or more Individual Meters that are downstream of one or more Common Meters, for the purposes of this determination, the Property is served by those Individual Meters and not by the Common Meters.

20.6 Annual charges, billing and pro rata

(1) For the avoidance of doubt, nothing in this determination affects:

(a) when Essential Energy may issue a bill for prices or charges under this determination; or

(b) when Essential Energy must read a Meter; or

(c) who Essential Energy must levy prices or charges under this determination on.

[Note: For example, the maximum price that Essential Energy may levy for supplying Water Supply Services to a Residential Property in a Multi-Premises that is served by a single Common Meter is the sum of the applicable service charge and the Residential Property's share of the water usage charge for the Multi-Premises. This determination does not prevent Essential Energy from levying the service charge on the owner of the Residential Property and the aggregate water usage charge for all Residential Properties served by the Common Meter on the relevant owners corporation of the Multi-Premises.]

(2) In respect of any period after the Commencement Date that is less than a full financial year, the annual charges in this determination will be pro-rated for that period, based on the proportion that the number of days in that period bears to the number of days in the financial year.

[Note: For example, if this determination commences on 1 January 2023 the annual charges in this determination will be pro-rated based on the number of days in the period from 1 January 2023 to 30 June 2023 as a proportion of the total number of days in the financial year from 1 July 2022 to 30 June 2023. The annual charges for the period from 1 July 2022 to 31 December 2022 will be determined under the 2019 Determination and pro-rated in accordance with that determination.]

(3) In respect of any Meter Reading Period that traverses more than one Period, the charges in this determination will be pro-rated for that Meter Reading Period, based on the proportion that the number of days in the Meter Reading Period bears to the number of days in each Period.

21 Definitions

21.1 Consumer Price Index

(1) CPI means the consumer price index All Groups index number for the weighted average of eight capital cities, published by the Australian Bureau of Statistics; or, if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by IPART.

(2) The maximum prices in this determination are to be adjusted for inflation by multiplying the specified price by the specified CPI multiplier:

(a) CPI_1;

(b) CPI_2; or

(c) CPI_3.

(3) The CPI multipliers are calculated using the applicable formula in Box 9.

Box 9 Calculation of CPI multipliers

$$CPI_1 = \frac{CPI_{March2023}}{CPI_{March2022}}$$

$$CPI_2 = \frac{CPI_{March2024}}{CPI_{March2022}}$$

$$CPI_3 = \frac{CPI_{March2025}}{CPI_{March2022}}$$

Where:

$CPI_{March2022}$ means CPI for the March quarter of 2022;

$CPI_{March2023}$ means CPI for the March quarter of 2023;

$CPI_{March2024}$ means CPI for the March quarter of 2024; and

$CPI_{March2025}$ means CPI for the March quarter of 2025.

21.2 General definitions

In this determination:

2019 Determination means IPART's determination dated 2019 and titled 'Essential Energy's prices for water and sewerage services in Broken Hill from 1 July 2019 to 30 June 2022', published in New South Wales, *Gazette*, No 67, 28 June 2019, 2414.

Category 1 Trade Waste Discharge means Trade Waste discharge which:

(a) arises from an activity conducted on a Non-Residential Property;

(b) is deemed by Essential Energy to be of a low risk nature and to require nil or minimal pre-treatment prior to its discharge into the Wastewater System; and

(c) is discharged pursuant to a trade waste agreement with Essential Energy.

Category 1a Trade Waste Discharge means Trade Waste discharge which:

(a) arises from an activity conducted on a Non-Residential Property;

(b) is deemed by Essential Energy to be either of a low risk nature but to require a more sophisticated prescribed pre-treatment than Category 1 Trade Waste Discharge prior to being discharged into the Wastewater System; and

(c) is discharged pursuant to a trade waste agreement with Essential Energy.

Category 2 Trade Waste Discharge means Trade Waste discharge which:

(a) arises from an activity conducted on a Non-Residential Property;

(b) is deemed by Essential Energy to be of a medium risk nature but to require a prescribed type of liquid trade waste pre-treatment prior to being discharged into the Wastewater System; and

(c) is discharged pursuant to a trade waste agreement with Essential Energy.

Category 3 Trade Waste Discharge means Trade Waste discharge which:

(a) arises from an activity conducted on a Non-Residential Property;

(b) is deemed by Essential Energy to be either of a high volume (over 20kL per day) or of an industrial nature and to require a prescribed type of liquid trade waste pre-treatment prior to being discharged into the Wastewater System; and

(c) is discharged pursuant to a trade waste agreement with Essential Energy.

CBH Resources Mining Customer Property means a Mining Customer Property owned by CBH Resources Ltd, or on which CBH Resources Ltd carries out mining and exploration activities.

CBH Resources Ltd means CBH Resources Limited ACN 009 423 858 and includes any related body corporate within the definition of section 50 of the *Corporations Act 2001* (Cth) that is a Mining Customer.

Chlorinated Water means water that has been treated with a chlorine disinfection process, but not filtered to remove solids and organic particles.

Commencement Date means the commencement date defined in clause 2(1) of part 1 of this determination.

Common Meter means a Meter which services a Multi-Premises, where the Meter measures the water supplied to the Multi-Premises but not to each relevant Property located on or within that Multi-Premises.

Community Development Lot has the meaning given to that term under the *Community Land Development Act 2021* (NSW).

Company Title Building means a building owned by a company where the issued shares of the company entitle the legal owner to exclusive occupation of a specified Company Title Dwelling within that building.

Company Title Dwelling means a dwelling within a Company Title Building.

Corporation has the meaning given to that term under section 57A of the *Corporations Act 2001* (Cth).

DF or **Discharge Factor** means:

(a) in relation to a Property (other than a Mining Customer Property) with a single Individual Meter, or multiple Individual Meters, the percentage of water supplied to that Property which Essential Energy estimates to be discharged into the Wastewater System;

(b) in relation to a Property (other than a Mining Customer Property) within a Multi-Premises with one or more Common Meters, the percentage of water supplied to that Property which Essential Energy estimates to be discharged into the Wastewater System;

(c) in relation to a Multi-Premises, the percentage of water supplied to that Multi-Premises which Essential Energy estimates to be discharged into the Wastewater System; and

(d) in relation to a Mining Customer Property with a single Individual Meter, or multiple Individual Meters – 100%.

Domestic Equivalent means a concentration or level the same as would be found in household wastewater.

Essential Energy means the Corporation established under section 7 of the *Energy Services Corporations Act 1995 (*NSW) and listed in Part 2 of Schedule 1 of that Act as 'Essential Energy'.

Essential Water means the part of Essential Energy which provides Water Supply Services and Wastewater Services to customers.

EW Pipeline Property means a Property which may access Untreated Water from the Menindee Pipeline or the Umberumberka Pipeline (or, in the event that the Menindee Pipeline is decommissioned, could access Untreated Water from the Menindee Pipeline immediately prior to it being decommissioned).

Exempt Land means land to which section 312 of the Water Management Act applies.

GST means the Goods and Services Tax as defined in *A New Tax System (Goods and Services Tax) Act 1999* (Cth).

Individual Meter means a Meter that services a Property, where the Meter only measures the water usage at that Property.

IPART means the Independent Pricing and Regulatory Tribunal established under the IPART Act.

IPART Act means the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW).

kL means kilolitre or one thousand litres.

Local Government Act means the *Local Government Act 1993* (NSW).

Menindee Pipeline means the untreated water pipelines which run from Broken Hill to Stephen's Creek and from Stephen's Creek towards Menindee.

Meter means an apparatus for the measurement of water usage, but does not include an apparatus used by Essential Energy to check the quantity of water use recorded by a Meter.

Metered Non-Residential Property means a Non-Residential Property that is serviced by one or more Individual Meters.

Meter Reading Period means a period equal to the number of days between:

(a) the date (**Last Reading Date**) on which Essential Energy last read the Meter or is taken to have read the Meter, including by estimating consumption for the Property or Multi-Premises (as the case may be); and

(b) the date (**Earlier Reading Date**) immediately preceding the Last Reading Date on which Essential Energy read the Meter or is taken to have read the Meter, including by estimating consumption for the Property or Multi-Premises (as the case may be),

which period includes the Last Reading Date but does not include the Earlier Reading Date.

Mining Customer means any Corporation which undertakes the mining or exploration activities on a Mining Customer Property, including CBH Resources Ltd and Perilya Broken Hill Ltd.

Mining Customer Property or **Mining Customer Properties** means a Property that is a Non-Residential Property in the Broken Hill area and on which the primary activity that is undertaken is mining or exploration activities and includes CBH Resources Mining Customer Properties, Perilya Broken Hill Mining Customer Properties and New Mining Customer Properties.

Miscellaneous Customer Services means the ancillary and miscellaneous customer services referred to in clause 2(d) of the Order.

Mixed Multi-Premises means a Multi-Premises that contains at least one Residential Property and at least one Non-Residential Property.

Monopoly Services means the Monopoly Services as defined in clause 1 of this determination.

Multi-Premises means a premises where there is more than one Property.

Multi-Premises Property includes:

(a) a Strata Title Lot; and

(b) a part of a building lawfully occupied or available for occupation (other than a Strata Title Building to which paragraph (a) applies),

but excludes a Retirement Village.

New Mining Customer means any Corporation other than Perilya Broken Hill Ltd or CBH Resources Ltd:

(a) which undertakes mining or exploration activities on a Mining Customer Property after the Commencement Date; or

(b) that acquires, takes control or management of a Corporation which undertakes mining and exploration activities on a Mining Customer Property after the Commencement Date.

New Mining Customer Property means a Mining Customer Property owned by a New Mining Customer or on which a New Mining Customer carries out mining and exploration activities.

Non-Residential Multi-Premises means a Multi-Premises containing only Non-Residential Properties.

Non-Residential Property or **Non-Residential Properties** means a Property that is not:

(a) a Residential Property; or

(b) land that has no capital improvements and no connection to the Water Supply System.

Order means the *Independent Pricing and Regulatory Tribunal (Country Energy) Order 2008* published in the New South Wales Government Gazette No. 147 on 14 November 2008.

Perilya Broken Hill Mining Customer Property means a Mining Customer Property owned by Perilya Broken Hill Ltd, or on which Perilya Broken Hill Ltd carries out mining and exploration activities.

Perilya Broken Hill Ltd means Perilya Broken Hill Limited ACN 099 761 289 and includes any related body corporate within the definition of section 50 of the *Corporations Act 2001* (Cth) that is a Mining Customer.

Period means, as the case may be:

(a) 1 July 2022 to 30 June 2023;

(b) 1 July 2023 to 30 June 2024;

(c) 1 July 2024 to 30 June 2025; or

(d) 1 July 2025 to 30 June 2026.

Property or **Properties** includes:

(a) a Strata Title Lot;

(b) a Company Title Dwelling;

(c) a Community Development Lot;

(d) a Retirement Village;

(e) a building, or part of a building, occupied or available for occupation as a separate place of domicile or separate place of business, other than a building to which paragraphs (a) to (d) apply; or

(f) land (including Vacant Land); but

excludes a Retirement Village Unit.

[Note: For the avoidance of doubt, the definition of 'Property' includes Exempt Land.]

Rateable Land has the meaning given to that term under the Local Government Act.

Residential Multi-Premises mean a Multi-Premises containing only Residential Properties.

Residential Property or **Residential Properties** means a Property, other than an EW Pipeline Property or a Retirement Village, where:

(a) in the case of the Property being Rateable Land, the Property is categorised as:

  i) 'residential' under section 516 of the Local Government Act; or

  ii) 'farmland' under section 515 of the Local Government Act; or

(b) in the case of the Property not being Rateable Land, the dominant use of the Property is:

  i) residential, applying the classifications in section 516 of the Local Government Act; or

  ii) farmland, applying the classifications in section 515 of the Local Government Act.

Retirement Village has the meaning given to that term under the *Retirement Villages Act 1999* (NSW).

Retirement Village Unit means a unit located in a Retirement Village.

Strata Title Building means a building that is subject to a strata scheme under the *Strata Schemes Development Act 2015* (NSW).

Strata Title Lot means a 'lot' as defined under *Strata Schemes Development Act 2015* (NSW).

Trade Waste means wastewater from customers with concentrations of pollutants that exceed a Domestic Equivalent.

Trade Waste Discharge Factor is the ratio of the Volume of Liquid Trade Waste discharged into the Wastewater System to the total water consumption expressed as a percentage.

Trade Waste Policy means Essential Water's policy titled *Water: Discharge of Liquid Trade Waste Policy* dated May 2022, as approved by the Department of Planning and Environment and as amended or replaced from time to time.

Trade Waste Services means the trade waste services referred to in clause 2(c) of the Order.

Treated Water means water that has been treated with a disinfection process and filtered to a standard that is primarily intended for human consumption.

Umberumberka Pipeline means the water pipeline which runs from Broken Hill towards Umberumberka.

Unconnected Property or **Unconnected Properties** means:

(a) in the context of Part 2, a Property that is not connected, but is reasonably available for connection, to the Water Supply System; and

(b) in the context of Part 3, a Property that is not connected, but is reasonably available for connection, to the Wastewater System.

Unmetered Property means a Residential Property or a Non-Residential Property, which is not serviced by any Meter.

Untreated Water means water in its natural state, prior to any treatment process.

Vacant Land means an Unconnected Property with no capital improvements.

Volume of Liquid Trade Waste is the volume of water (Treated Water, Chlorinated Water and Untreated Water, as applicable) supplied (in kL) to the relevant Non-Residential Property for the Meter Reading Period, as calculated under Part 2 of this determination, multiplied by the Trade Waste Discharge Factor.

Wastewater Services means the sewerage services referred to in clause 2(b) of the Order.

Wastewater System means the wastewater system of Essential Energy.

Water Management Act means the *Water Management Act 2000* (NSW).

Water Supply Services means the water supply services referred to in clause 2(a) of the Order.

Water Supply System means the water supply system of Essential Energy.

IPART Independent Pricing and Regulatory Tribunal | NSW

Review of Essential Water's prices for water and wastewater services in Broken Hill

Final Report

November 2022

Water »

Tribunal Members

The Tribunal members for this review are:

Carmel Donnelly PSM, Chair
Deborah Cope
Sandra Gamble

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

Matthew Mansell	(02) 9113 7770
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Letitia Watson-Ley	(02) 9290 8402

The team working on this review includes: Eva McBride, Bee Thompson, Milo Letho and Adrian Thomas.

The Independent Pricing and Regulatory Tribunal (IPART)

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

Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders, past, present and emerging.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

Contents

1 Water and wastewater bills to remain stable, before inflation

We have set prices for water and wastewater services provided by Essential Water to Broken Hill and surrounding communities to apply from 1 January 2023 until 30 June 2026. Under these prices, bills would be unchanged for most residential and business customers, before inflation.

To set these prices, we reviewed Essential Water's pricing proposal, which set out a 13% increase in its costs and an expanded government subsidy which would limit price increases to around 2% per year, before inflation.

Overall, we consider most of Essential Water's pricing proposal is reasonable. We reviewed Essential Water's proposed investments in its water and wastewater infrastructure, ongoing operating costs and its customer and sales forecasts. Our decision is to accept most of what Essential Water has proposed, but also to make some adjustments in areas where we think it is achievable for Essential Water to provide better value for money for customers by reducing its costs. These cost reductions mean that prices would remain stable.

Broken Hill is one of the most arid parts of NSW, so secure and affordable water plays an important role in maintaining greenspaces and managing health risks from exposure to high levels of lead. Since releasing our Issues Paper in September 2021, we heard from people in Broken Hill who told us they did not support Essential Water's proposed price increases. Some people told us that water quality and security in Broken Hill has noticeably improved since the new WaterNSW Pipeline came into use,[1] but also that Essential Water's infrastructure in Broken Hill is ageing and needs to be upgraded.

The full cost of providing water and wastewater services in Broken Hill is around $4,100 per customer on average per year, but customers currently contribute around half that cost through their water and wastewater bills. The remaining half is the cost Essential Water incurs from transporting water through the WaterNSW Pipeline, which the NSW Government currently subsidises and is paid for by NSW taxpayers. The NSW Government has confirmed the existing WaterNSW Pipeline subsidy will continue over the upcoming determination period.[2] Our final decisions on prices mean that typical residential bills in and around Broken Hill would remain in line with bills in other regional areas.

2 Our decisions on prices and bills

Essential Water supplies water to around 9,900 residential customers and around 600 non-residential customers. Its 2 largest customers are mines, which together account for around a third of its customers' total water sales.[3]

Essential Water provides the following water services:

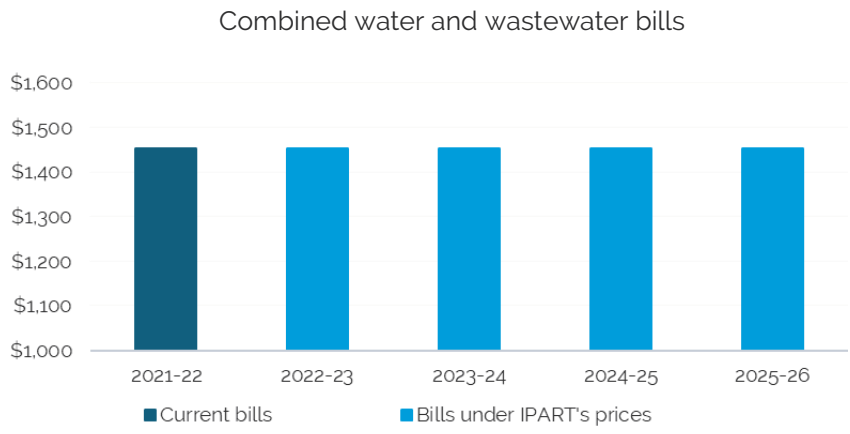
- **Treated water** – also known as drinking water – to Broken Hill and Menindee.
- **Untreated water** to some locations in Broken Hill and Menindee, and to customers along the Menindee, Stephens Creek and Umberumberka pipelines (the EW Pipelines).
- **Chlorinated water** – which is untreated water that has been disinfected but not filtered – to customers in Silverton and Sunset Strip.

It also provides wastewater services to customers in Broken Hill, where it operates 2 wastewater treatment plants. The sections below summarise our decisions on prices for these water and wastewater services.

2.1 Water and wastewater bills would remain stable, before inflation

Under our decisions, water and wastewater bills for most residential and business customers would remain stable, before inflation. This means bills would increase each year by inflation only.

Stable residential bills for the next 4 years



Note: Bills are in $2021-22.
Source: IPART analysis.

Each year, we adjust Essential Water's prices for inflation. Table 2.1 and Table 2.2 show our decisions on water and wastewater prices to apply from 1 January 2023, including inflation of 5.1%. Prices will continue to be adjusted in line with inflation each year to 30 June 2026, as future inflation information becomes available.

Table 2.1 Our decisions on Essential Water's water prices (including inflation)

	Current $2021-22	New $2022-23
Usage prices ($/kL)		
Treated	1.88	1.98
Untreated	1.65	1.73
Untreated (EW Pipeline customers)	1.06	1.20
Chlorinated	1.40	1.54
Service prices ($/year)		
Residential	342.89	360.38
Non – residential meter		
• 20mm connection	342.89	360.38
• 150mm connection	19,288	20,271
Mines ($'000s)		
• Perilya	2,408	2,531
• CBH	581	611

Source: IPART analysis.

Table 2.2 Our decisions on Essential Water's wastewater prices (including inflation)

	Current $2021-22	New $2022-23
Usage price ($/kL)		
Non-residential	1.34	1.41
Service price ($/year)		
Residential	546.37	574.23
Non – residential		
• 20mm connection	608.24	639.26
• 150mm connection	34,214	35,958

Source: IPART analysis

Taking inflation into account, a typical household would pay an annual water and wastewater bill of $1,527 in 2022-23. This is about $40 lower than the bill under Essential Water's proposed prices.

2.1.1 New prices will commence on 1 January 2023

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

Our view is that both utilities and customers should be no better or worse off as a result of the 6-month delay. Therefore, in setting prices for this review, we have factored in an adjustment for foregone inflation in the period from 1 July 2022 to 31 December 2022. For details please see Chapter 5 of our Final Technical Report.

2.2 Affordability is a key concern for Essential Water customers

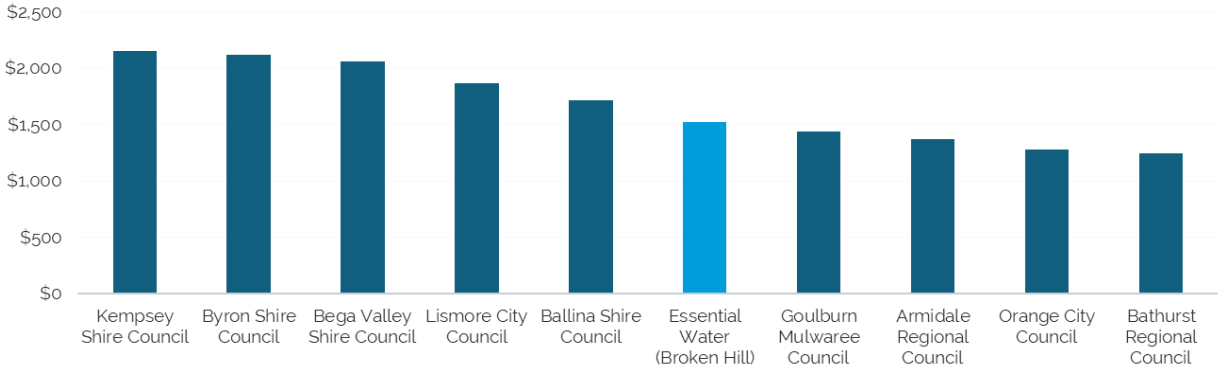
Stakeholders supported our decision to keep most of Essential Water's prices stable.[4] However, some were concerned about the affordability of those prices if we adjusted them for inflation each year, especially the impact this could have on those experiencing socio-economic disadvantage.[5] Broken Hill City Council proposed we consider capping the inflation increase to 3.5% per year.[6]

While we do not agree with proposals to cap the annual inflation adjustment to prices, we acknowledge the current environment of high inflation is putting pressure on household budgets. However, we need to balance this with Essential Water being able to recover its costs so it can continue to provide critical water and wastewater services in Broken Hill.

We have reviewed Essential Water's costs and identified savings. Through this process we are able to limit most price increases to inflation only, while ensuring Essential Water has sufficient revenue to cover its necessary costs. When compared with similar utilities, this means typical bills in Broken Hill would still be in the middle range of what households pay in other regional areas. Further. typical residential bills would continue to represent about 2.5% of the median household income in Broken Hill.

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

Figure 2.1 Typical household water and wastewater bills in regional NSW areas (including inflation, $2022-23)



Source: IPART analysis.

We recognise that prices increasing for inflation could have substantial impacts on some customers, including pensioners. We are conscious the pensioner rebate available to Essential Water customers has not increased for many years. This is set in legislation at a capped amount and is significantly lower than the rebate available to pensioners served by Sydney Water and Hunter Water.

We recommend the NSW Government review the appropriateness of pensioner concessions for water and wastewater bills across the state.

2.3 We considered feedback from the community on service quality

In making our decision on prices, we considered what people told us about the quality of services they receive from Essential Water. Some people said the WaterNSW Pipeline has improved water quality and security for the Broken Hill region. For example:

- Broken Hill City Council and Silverton Village Committee Inc noted that water quality has improved due to the Broken Hill pipeline connection to the Murray River.[7]
- An individual noted that water security has improved since the construction of the WaterNSW Pipeline.[8]

However, Silverton Village Committee Inc and the individual, who receive services outside Broken Hill, expressed dissatisfaction with their water quality due to their local infrastructure.

We recognise that providing services to customers in remote areas can be costly and challenging. We encourage Essential Water to engage with its customers on these service quality issues to understand and respond to these concerns.

2.4 Our prices factor in the existing WaterNSW Pipeline subsidy

When we set prices for Essential Water in 2019, the NSW Government committed to subsidising Essential Water's prices for 4 years, so prices would not increase as a result of the WaterNSW Pipeline. It has since confirmed this subsidy will continue for the next 4 years,[9] and our prices factor in this commitment.

Each year, it costs Essential Water around $4,100 per customer to provide water and wastewater services (this is an average across all residential and non-residential customers). However, Essential Water's customers contribute an average of $2,200 to these costs through their water and wastewater bills. The rest is paid by the NSW Government through a subsidy to cover the cost of the WaterNSW Pipeline.

Stakeholders welcomed the NSW Government's commitment, but some were concerned it did not extend beyond the next 4 years.[10]We acknowledge the concerns stakeholders have about the continuation of the WaterNSW Pipeline subsidy.

We encourage Essential Water to address this issue at the next price review under our new regulatory framework. This new framework aims to ensure Essential Water consults with its customers and develops long-term plans to deliver on the outcomes its customers value.

Submissions indicate securing the future of the subsidy would be a key outcome for Essential Water's customers. We recommend Essential Water work with NSW Government agencies and explore options to provide customers with greater long-term certainty about the status of the WaterNSW Pipeline subsidy and to reflect this in its next pricing proposal.

2.5 Some usage prices would increase by more than inflation

For some customers, bills will increase by more than inflation. There are 3 groups of customers who receive an untreated or chlorinated water service from Essential Water. It supplies:

- Untreated water to a small number of customers along the Menindee, Stephens Creek and Umberumberka pipelines (i.e. EW Pipeline customers).
- Untreated water to other customers, such as Broken Hill City Council and the mines.
- Chlorinated water to customers in Silverton and Sunset Strip.

EW Pipeline customers currently do not pay the same water usage price as other untreated water customers in Broken Hill. This is because, historically, they were incidental customers located along pipelines that transported water into Broken Hill. They received a lower price to reflect the fact that they were not driving costs of supplying water to Broken Hill to the same extent as other untreated water customers in Broken Hill. Since the WaterNSW Pipeline came into operation, this situation has changed. EW Pipeline customers are now indistinguishable from other untreated water customers in Broken Hill as they are all connected to the same water supply network.

For this reason, we have made a decision to continue to transition the untreated water usage price for EW Pipeline customers, so eventually there will be a single untreated water usage price for all of Essential Water's untreated water customers. We are also continuing to transition the chlorinated water usage price to this single untreated water usage price. We made the same decision in the last review because it better reflects the cost of supplying chlorinated water to customers.

We consulted with stakeholders on this issue during the 2019 price review. We took their concerns about affordability into account and changed our approach between the Draft and Final Reports. Our final decision was to transition these prices over 10 years, rather than equalise them straight away.[11] This gave customers time to adjust their operations and manage their bill impacts.

We are continuing to follow the gradual pricing transition path set down in the 2019 price review. We have recommended the NSW Government continue to subsidise this transition. This means it would not be paid for by other Essential Water customers.

By moving to the standard usage price for untreated water, EW Pipeline customers will face the same incentives around water usage and maintaining greenspaces as Essential Water's other untreated water customers.

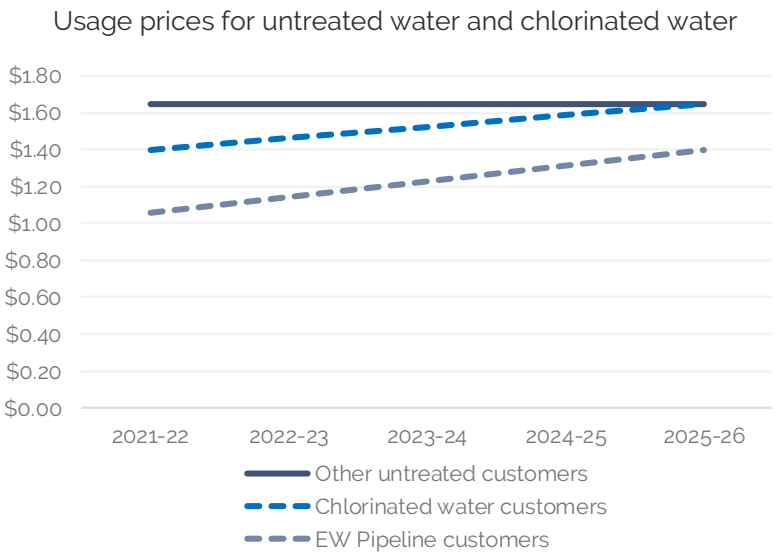
Over 4 years, water bills for EW Pipeline customers would increase by around 3.3% a year on average, while chlorinated water customer bills would increase by around 2.4% a year on average (in each case, before inflation).

This means that, compared to their current bills, after 4 years the annual bills for:

- EW Pipeline customers would be around $85 higher.[b]
- Chlorinated water customers would be around $75 higher.[c]

[b] The water bill estimate is for an EW Pipeline customer with a 20mm meter and 250kL per year water usage.
[c] The water bill estimate is for a chlorinated water customer with 300kL per year water usage.

We are gradually harmonising these prices over time



Source: IPART analysis.

2.6 We have largely accepted Essential Water's proposal for the pricing of other services and trade waste

We consider most of Essential Water's proposal for the pricing of other services and trade waste is reasonable and in line with our pricing principles. Therefore, we have decided to accept most of Essential Water's proposal for these services. For details please see Chapter 9 of our Final Technical Report.

3 Broken Hill faces unique challenges around accessing and using water

Water access and use in the Broken Hill region is an important concern for the community. The region relies on water to manage the hot and dry climate, as well as to mitigate elevated lead levels in the environment.

We were told that any increase in water prices could result in people reducing their water use. This would limit the community's ability to use water to actively manage lead exposure (eg, wet wiping of surfaces), cool homes and maintain the greenspaces required to suppress lead dust.[12] People were also concerned that reducing water use could negatively impact on investment in Broken Hill and skilled workers moving to the region.[13]

We recognise that Broken Hill faces unique environmental pressures. Reducing water use may not be in the public interest, given its important role in lead suppression. Therefore, being able to access and use affordable, safe and reliable water has a critical on impact on health and wellbeing in the region. It also affects the liveability of Broken Hill and its ability to generate sustainable employment and investment.

In this current price review, we are generally keeping prices stable, which assists with affordability. For the next price review, we plan to introduce our new regulatory framework. This framework is centred around delivering customer value.

We expect Essential Water to consult with its customer about their priorities for water access and use, as well as their preferences around water bills.

Essential Water should ensure its consultation includes residential, non-residential and mining customers. This will help Essential Water to identify how its proposal fits in with their priorities and preferences, so it can promote better outcomes for its customers.

Our pricing decisions are one part of the broader approach required to facilitate water access and use which is in the best interests of customers and the community. We agree with the view from stakeholders that a holistic approach is required.

We consider it is a priority for Essential Water, Broken Hill City Council and key government agencies – such as the Department of Planning and Environment and NSW Health – to work together to develop a draft water plan for Broken Hill for consideration by the NSW Government. The plan should identify the optimal level of water usage in Broken Hill to mitigate the health risks posed by lead dust and consider a longer-term approach to the NSW Government subsidy for the WaterNSW pipeline. We encourage Essential Water to be a proactive participant in development of this plan and in consultation with stakeholders and customers.

4 How we determined these prices

In making our decisions on prices, we:

- considered Essential Water's pricing proposal and the community's feedback on the proposal, as well as Essential Water's and the community's comments on our draft decisions
- assessed the reasonable costs of providing safe and reliable water and wastewater services in Broken Hill, so that customers pay no more than necessary
- assessed forecast demand for Essential Water's water and wastewater services.

4.1 Essential Water's costs to deliver services are relatively stable

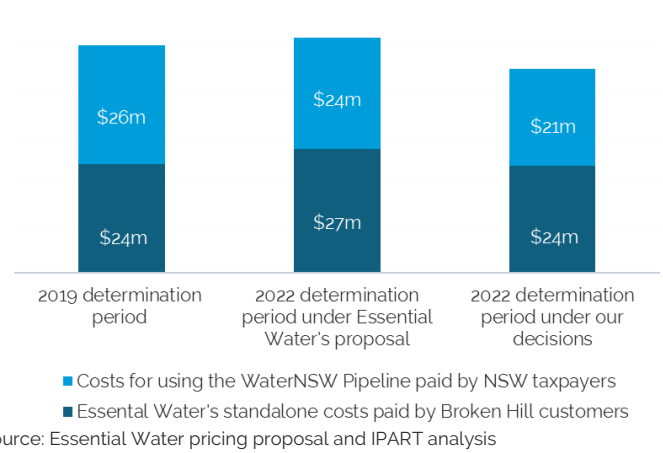
When we set prices for a regulated business like Essential Water, we generally aim to set prices to cover the reasonable costs of providing services to customers. We assessed the costs of providing water and wastewater services in the Broken Hill region and asked expert consultants to provide advice on whether Essential Water's proposed costs are reasonable.

Based on our assessment of Essential Water's costs, our decision is to set the amount of revenue Essential Water needs to provide services at around $45 million on average per year, over the next 4 years. This is around 13% lower than Essential Water's proposed revenue level.

Excluding the costs of transporting water through the WaterNSW Pipeline, Essential Water proposed that its revenue level should increase from around $24 million per year to around $27 million per year. Our decision is that the revenue level would remain stable at around $24 million per year (similar to the revenue level we set in the 2019 review, when compared on an average yearly basis). This explains why our prices are stable, before inflation.

Essential Water's revenue level (excluding WaterNSW Pipeline costs) is similar to the level we set in 2019

Comparison of average revenue level per year



Source: Essential Water pricing proposal and IPART analysis

There are 3 main reasons for the difference between Essential Water's proposed revenue level and the revenue level we have set:

1. We found some opportunities for Essential Water to lower its operating costs and have set the revenue level to reflect these opportunities.
2. We expect Essential Water to become more productive over time and have applied a continuing efficiency target to both operating and capital costs. This target is based on long term trends in productivity across the whole economy.
3. The rate of return to finance Essential Water's operations has declined since our last review of prices in 2019.

Our final decision to set the revenue level at around $24 million per year is marginally higher than our draft decision. This is largely driven by a slight increase in our allowance for operating expenditure associated with Essential Water's labour requirements. Despite this marginal increase in costs, prices paid by customers in the Broken Hill region remain stable, before inflation.

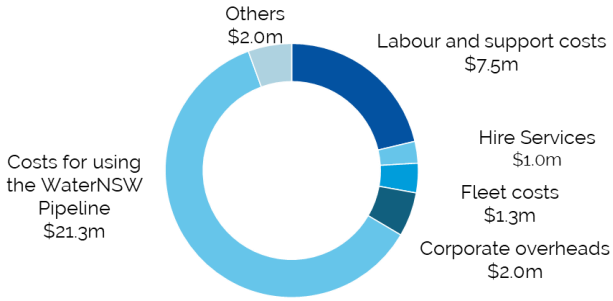
4.1.1 We found opportunities to reduce Essential Water's proposed operating costs

Like most water utilities, operating costs make up around 40% of the costs Essential Water incurs in running its water and wastewater services. Essential Water incurs 2 types of operating costs:

- its own day-to-day costs like staff wages, electricity and contractors, which are recovered through prices that customers pay
- costs to transport water using the WaterNSW Pipeline, which are currently covered by a subsidy from the NSW Government.

Our decision is to set prices based on operating costs of around $35 million on average per year over the 2022 determination period. Under our decisions, Essential Water would spend around $13.7 million on its day-to-day costs and $21.3 million for water transportation costs. Water transportation costs make up around 60% of Essential Water's overall costs (shown below). The NSW Government will subsidise these costs over the next 4 years, which is discussed further in section 2.4.

Operating costs by activity under our decisions



Note: Figures are per year and after the continuing efficiency adjustment.
Source: IPART analysis.

We reviewed operating costs to ensure we allow only those costs needed to deliver the water services customers need and expect

Under our decisions, Essential Water's day-to-day costs are around 7% higher than what we used to set prices in our last review in 2019, but 8% lower than Essential Water's proposal. We have set costs lower than Essential Water's proposal based on advice from expert cost consultants (AECOM) who found opportunities for Essential Water to reduce its costs. AECOM reviewed Essential Water's proposal and compared it to the least cost necessary to ensure water and wastewater services in Broken Hill are secure, safe and reliable.

Under our decisions, we have also put in place a continuing efficiency target over the next 4 years. This encourages Essential Water to become more productive over time and reduce its operating costs accordingly.

Our final decision to set the allowance at $13.7 million per year for day-to-day operating costs is slightly higher than our draft decision. This is mainly because we increased the allowance for labour costs. We have also allowed a small increase in spend associated with customer engagement – see Box 4.1 for more on customer engagement.

Box 4.1 Essential Water expected to increase customer engagement efforts

On Essential Water's request, we have allowed a small increase in operating costs to accommodate more extensive customer engagement. To date, Essential Water's level of customer engagement has been minimal, and comments at the public hearing in Broken Hill attested to this.[14] It is good practice for a business to closely engage with its customers to understand their needs and expectations. We expect Essential Water to step up its level of customer engagement accordingly. This will be critical to ensure Essential Water's priorities and long-term plans align with the needs and expectations of its customers and the broader community.

We are also in the process of making a fundamental shift in our regulatory framework, under which we will expect businesses to demonstrate that customers are at the heart of their regulatory proposals.[15] The quality of customer and community engagement will have direct financial implications for the businesses we regulate. Importantly, the businesses will need to demonstrate that their chosen approach to engagement is fit for purpose and provides value for money.

In addition, we encouraged Essential Water in Chapter 3 to be a key party in developing a long-term plan for the Broken Hill region. We expect Essential Water to engage customers and the community on this matter given potential impact on its future services.

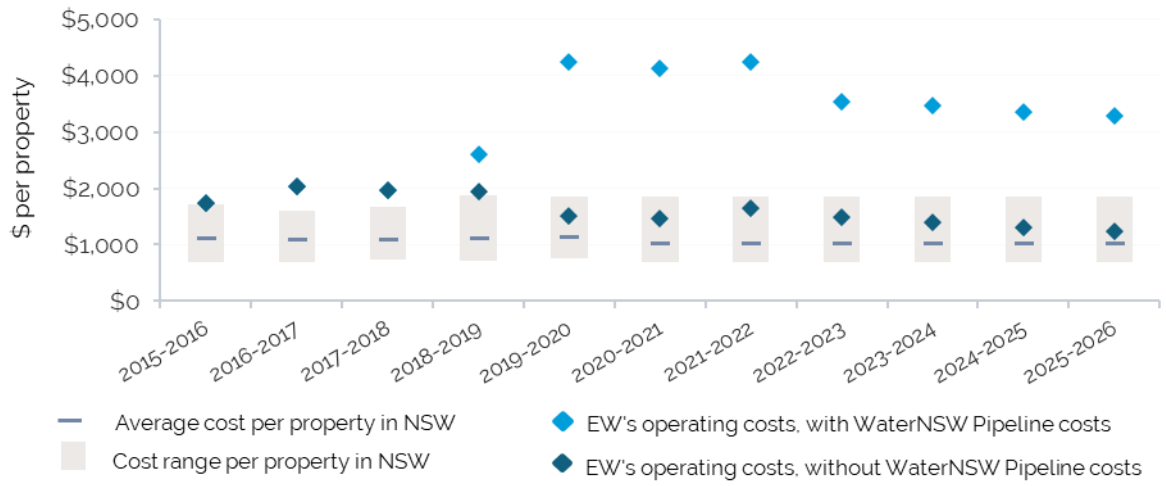
To sense-check our final decision on the operating cost allowance, we compared Essential Water's operating costs under our decisions against other water utilities in NSW. Figure 4.1 compares operating costs on a per property basis across all water utilities in NSW.

Before the WaterNSW Pipeline became operational in 2019, Essential Water's operating costs per property was one of the highest in NSW. This is because Essential Water has a relatively large network of water and wastewater infrastructure that services a small customer base in a remote location. Essential Water's customer base includes a small number of large mines that make up around a third of its total water sales.

Since 2019, Essential Water's day-to-day costs have fallen but are still above the average cost per property in NSW. Because Essential Water now sources most of its water from the WaterNSW Pipeline instead of its own infrastructure, its energy and materials costs have decreased. Over the next 4 years, we expect Essential Water's costs to continue to decrease to a level that is closer to the average in NSW experienced over the last 5 years. We consider our decision on operating costs will give Essential Water enough time to lower its costs while managing the challenges of operating a business in a remote location.

If we include the cost of water transportation, we found that cost per property in the Broken Hill region would still be the highest in NSW. The cost of using the WaterNSW Pipeline is subsidised by the NSW Government and not paid for by customers – see section 2.4 for more information on the subsidy. The cost of the WaterNSW Pipeline is also reviewed separately and set by IPART.

Figure 4.1 Analysis of our Essential Water's operating costs against other utilities



Note: Over the 2015-16 to 2021-22 period, we used the data reported by Essential Water in its pricing proposal and compared them with Bureau of Meteorology's 2019-20 national performance report for utilities in NSW. Over the 2022 determination period, we used the results of our decisions and compared them with 5-year averages using the national performance report. In addition, the cost analysis is undertaken on per property basis, which is different to how we set prices or analyse bill impacts.
Source: IPART analysis and Bureau of Meteorology's 2019-20 national performance report.

Under our decisions, Essential Water would have time to lower its costs while managing the challenges of operating a business in a remote location in NSW.

4.1.2 We consider most of Essential Water's proposed capital expenditure is reasonable

Capital expenditure is required to buy or build new infrastructure and equipment. Essential Water's proposed capital expenditure over the next 4 years reflect a range of projects to upgrade its ageing infrastructure, including the Wills Street wastewater treatment plant and its water and sewer reticulation network.

We have reviewed Essential Water's proposed capital expenditure to ensure it is adequate to maintain and improve infrastructure as required, but also no higher than necessary. We have largely accepted Essential Water's proposed capital expenditure but have made some reductions to reflect opportunities for Essential Water to be more productive over time. Our final decision is to provide Essential Water an average annual allowance for capital expenditure of around $19.3 million over 2022 determination period. This is slightly higher than the average annual allowance of around $19 million over 2019 determination period.[d]

Our final decision on capital expenditure is unchanged from our draft decision.

More information on our review of Essential Water's costs is available in our Final Technical Report and our consultant's report.

4.1.3 Essential Water's financing costs have decreased since our last review

Like many businesses, Essential Water needs to finance its water and wastewater operations so it can continue to provide services. Financing costs (or rate of return) make up around 12% of Essential Water's revenue level. When setting prices, IPART makes an allowance using a standard method to cover these financing costs. Generally, higher financing costs (or rate of return) lead to higher prices.

Essential Water proposed a rate of return of 3.7%, which is slightly lower than the rate of return used to set prices in 2019 (4.0%).[16] Essential Water proposed a change to the way inflation expectations are factored into the calculation of the rate of return. We have decided to maintain our standard method and have set the rate of return at 2.8%. Our final decision is slightly lower than our draft decision of 2.9%, due to more up-to-date market information.

More information on how we set the rate of return, also known as the Weighted Average Cost of Capital, is available in Appendix D of our Final Technical Report.

[d] Expressed in $2021-22.

4.2 We accepted Essential Water's proposed water and wastewater usage forecasts to set prices

To set prices, we divided Essential Water's costs by the amount of water and wastewater services people in Broken Hill are predicted to use over the next 4 years. Our prices are based on Essential Water's forecasts for customer numbers and sales volumes for water and wastewater services, which we consider are reasonable. This decision is consistent with our draft decision.

Essential Water forecasts:

- yearly water use volumes for the 2022 determination period to be around 235 kL per household, which is lower than the estimate used in the last review, and reflects recent trends in water use in the Broken Hill region
- the number of residential and non-residential connections to remain relatively stable.

We received a number of submissions to our Issues Paper and Draft Report on water use. For example:

- Broken Hill City Council, Roy Butler MP and Outback Astronomy[e] said the community would use less water in response to price increases.[17] In particular, Broken Hill City Council noted even an increase for inflation could decrease water use.[18]
- PIAC said Essential Water should not rely on usage forecasts for price setting. It recommended Essential Water adopt long-term targets for demand similar to the Lower Hunter Water Security Plan and use price signals to encourage efficient water use.[19]
- Foundation Broken Hill recommended we forecast growth in the region rather than decline.[20] Along with Regional Development Australia Far West, it indicated water use would increase because of new mining activity expected to start in the next few years.[21]

No forecast is likely to be perfect. To reduce the risk that Essential Water will make too much or too little revenue if forecasts turn out to be wrong, we have included a demand volatility adjustment mechanism that helps protect both customers and Essential Water. If the forecast water use volumes we have used to set prices are more than 5% higher or lower than predicted over the next 4 years, we would consider adjusting future prices next time we set prices in 2026. This could mean compensating customers if volumes were higher than forecast (or compensating Essential Water if volumes were lower than forecast).

When we last set prices in 2019, we included this mechanism for the same reason. At the time, we thought people in Broken Hill would use more water once the WaterNSW Pipeline came into use and water restrictions were lifted. In 2019-20 and 2020-21, Essential Water's water sales were around 11% lower than what we predicted.[22] Therefore, when setting prices, we have adjusted Essential Water's revenue for the 2022 determination period to account for differences between forecast and actual water sales in the 2019 review period. This allows Essential Water to be financially sustainable, and we would do the same thing again at the next price review.

[e] Some usage prices would increase by more than inflation. To manage the bill impacts, we have made the price transition gradual over 10 years. We discuss this further in section 2.5.

5 We consulted extensively with stakeholders

Our review started on 30 June 2021 when Essential Water submitted its pricing proposal to us. We consulted with the community and other stakeholders, including publishing an Issues Paper and a Draft Report to which we sought feedback and submissions. In September 2022, we also held an in-person public hearing at a local venue in Broken Hill and other stakeholders joined the hearing online (see Figure 5.1).

We took all community views into account in making our final decisions. Sometimes we have had to balance conflicting views from stakeholders as well as our requirement to ensure that Essential Water receives sufficient funds to provide the level of service expected by the community.

The pricing proposal from Essential Water, our Issues Paper, Draft Report, Draft Technical Report, stakeholder submissions and the public hearing transcript and video are available on our website.

Our decisions and recommendations are listed and explained in our Final Technical Report.

Figure 5.1 Timetable for this review

[1] Broken Hill City Council, submission to IPART's Issues Paper for 2021 Review of WaterNSW's Murray River to Broken Hill Pipeline prices, October 2021, p 6.
[2] Department of Planning and Environment, Letter on the Subsidy for the WaterNSW Pipeline, August 2022, p 1.
[3] Essential Water, Essential Water Pricing Proposal, June 2021, p 17.
[4] Broken Hill City Council, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 1; Foundation Broken Hill, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 1
[5] Broken Hill City Council, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 2; Regional Development Australia Far West, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 1-3; Outback Astronomy, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 2.
[6] Broken Hill City Council, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 1.
[7] Broken Hill City Council, submission to IPART's Issues Paper for 2021 Review of WaterNSW's Murray River to Broken Hill Pipeline prices, October 2021, p 6.
[8] L Nadge, submission to IPART's Issues Paper for 2021 Review of WaterNSW's Murray River to Broken Hill Pipeline prices, October 2021, p 28.
[9] Department of Planning and Environment, Letter on the Subsidy for the WaterNSW Pipeline, August 2022, p 1.
[10] Broken Hill City Council, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 3; Outback Astronomy, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 5; R Butler MP, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 3.
[11] IPART, Review of Essential Energy's prices for water and sewerage services in Broken Hill, May 2019, p 109.
[12] Broken Hill City Council, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, pp 2-3; E. Kennedy, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill, September 2022, p 1; L. Nadge, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill, September 2022, p 5; R Butler MP, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 3; Regional Development Australia Far West, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, pp 4-6.
[13] Foundation Broken Hill, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 2; Regional Development Australia Far West, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 2; R Butler MP, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 3.
[14] Public Hearing Transcript, Review of prices for Essential Water and the WaterNSW Pipeline – Tuesday, 6 September 2022 pp 4, 9.
[15] IPART, Draft Water Regulatory Framework: Technical Paper, May 2022, p 9.
[16] Essential Water, Essential Water Pricing Proposal, June 2021, pp 78-79.
[17] Broken Hill City Council, submission to IPART's Issues Paper for 2021 Review of WaterNSW's Murray River to Broken Hill Pipeline prices, October 2021, p 8.
[18] Broken Hill City Council, submission to IPART's Draft Report for the 2021 Review of Essential Energy's water and wastewater prices for Broken Hill, September 2022, p 2.
[19] PIAC, submission to IPART's Draft Report for the 2021 Review of Essential Energy's water and wastewater prices for Broken Hill, September 2022, p 9.
[20] Foundation Broken Hill, submission to IPART's Draft Report for 2021 Review of Essential Energy's water and wastewater prices for Broken Hill, September 2022, p 2.
[21] Regional Development Australia Far West, submission to IPART's Issues Paper for the 2021 Review of Essential Energy's water and wastewater prices for Broken Hill, October 2021, p 8.
[22] IPART, Review of Essential Energy's prices for water and sewerage services in Broken Hill, May 2019, Table 7.1 p 92; Essential Water's AIRSIR submissions.

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IPART Independent Pricing and Regulatory Tribunal | NSW

Review of Essential Water's prices for water and wastewater services in Broken Hill

Final Technical Report

November 2022

Water »

Tribunal Members

The Tribunal members for this review are:

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Deborah Cope
Sandra Gamble

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The team working on this review includes: Eva McBride, Bee Thompson, Milo Letho and Adrian Thomas.

The Independent Pricing and Regulatory Tribunal (IPART)

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

Acknowledgment of Country

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

Contents

Chapter 1

Introduction

01

IPART sets prices that Essential Energy can charge its customers for water and wastewater services provided through its Essential Water business. Essential Water provides these services to customers in Broken Hill and the surrounding areas of Menindee, Sunset Strip and Silverton.

This Final Technical Report outlines our decisions on Essential Water's prices to apply from 1 January 2023 to 30 June 2026 and explains how and why we reached them. We also prepared a Final Report that sets out the key outcomes of our review.

1.1 Bills would be stable for most customers

Under our decisions, water and wastewater bills for most residential and business customers would remain stable, before inflation. As we adjust Essential Water's prices every year for inflation, our decisions mean bills would increase each year by inflation only.

Our bills are lower than Essential Water's proposal, where bills for most residential and business customers were proposed to increase by around 2% each year, before inflation. Essential Water's proposal included NSW taxpayers funding a new affordability subsidy. Otherwise Essential Water's proposed bills would have increased by closer to 6% each year, before inflation.

Under our decisions, water and wastewater bills for most residential and business customers would remain stable, before inflation.

Some customers will face higher increases in their bills. There are 3 groups of customers who receive an untreated or chlorinated water service. Essential Water currently supplies:

- Untreated water to a small number of customers along the Menindee, Stephens Creek and Umberumberka pipelines (the EW Pipelines).
- Untreated water to other customers, such as Broken Hill City Council and the mines.
- Chlorinated water to customers in Silverton and Sunset Strip.

The EW Pipeline customers currently do not pay the same water usage price as other untreated water customers in Broken Hill. This is because, historically, they were incidental customers located along pipelines that transported water into Broken Hill. They received a lower price to reflect the fact that they were not driving costs of supplying water to Broken Hill to the same extent as other untreated water customers in Broken Hill.

Since WaterNSW's Murray River to Broken Hill Pipeline (WaterNSW Pipeline) came into operation, this situation has changed. EW Pipeline customers are now indistinguishable from other untreated water customers in Broken Hill as they are all connected to the same water supply network.

For this reason, we have made a decision to continue to transition untreated water usage prices, so eventually there will be a single untreated water usage price for all of Essential Water's untreated water customers. We are also continuing to transition the chlorinated water usage price to this single untreated water usage price. We made the same decision in the last review because it better reflects the cost of supplying chlorinated water to customers.

To manage the bill impacts for these customers, we have made the price transition gradual. It is occurring over 10 years and continues our decision in the 2019 price review. We have recommended the NSW Government continue to subsidise this transition. This means it would not be paid for by other Essential Water customers.

Moving to the standard usage price for untreated water, means that EW Pipeline customer will face the same incentives around water usage and maintaining greenspaces as Essential Water's other untreated water customers.

Over 4 years, water bills for EW Pipeline customers would increase by 3.3% a year on average,[a] while chlorinated water customer bills would increase by 2.4% a year on average[b] (in each case, before inflation).

Section 1.7 discusses the prices we have set for each customer group and the breakdown of prices for water and wastewater services.

1.2 Our approach to setting prices for this review

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

- the projects Essential Water proposes to do to ensure quality services for its customers
- the ongoing costs of running a water business in Broken Hill
- the prices WaterNSW can charge Essential Water for water transportation services provided by the WaterNSW Pipeline, which we reviewed at the same time as Essential Water's prices
- the number of customers who will share these costs and the quantity of services they will use.

Based on our assessment of Essential Water's costs, our decision is to set the amount of money Essential Water can recover through prices (the revenue requirement) at around $45 million on average per year, over the next 4 years. This is around 10% lower than the cost we set in the 2019 Determination and 13% lower than Essential Water's proposed revenue requirement. When compared with the proposal, there are 3 factors driving the difference between Essential Water's proposed revenue requirement and our decision on the revenue requirement:

[a] The water bill estimate is for an EW Pipeline customer with a 20mm meter and 250kL per year water usage.
[b] The water bill estimate is for a chlorinated water customer with 300kL per year water usage.

1. the real rate of return (the WACC) we have applied to estimate Essential Water's return on assets. We used our standard method to apply a WACC of 2.8% which is lower than Essential Water's proposed WACC of 3.7%.
2. the cost of transporting water using the WaterNSW Pipeline has declined since our review in 2019
3. while we found that most of Essential Water's proposed operating costs (excluding the cost of the WaterNSW Pipeline) and capital costs were reasonable, we found some opportunities for Essential Water to find cost savings. The operating and capital cost allowances we have set reflect these opportunities for Essential Water to provide better value for money for its customers.

We found opportunities for Essential Water to lower its operating and capital costs by around 8% to ensure customers pay no more than they need to.

We also looked at the amount of water and wastewater services Essential Water expects to sell to its customers over the next 4 years and found that Essential Water's expectations are reasonable.

1.3 We consulted extensively with stakeholders

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

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

Figure 1.1 Timetable for this review

1.4 We considered feedback from the community on Essential Water's service quality and customer engagement

We sought feedback from the community on a number of issues relating to this review, including the quality of services they receive from Essential Water and whether these services are affordable. Some people told us that water quality in Broken Hill has noticeably improved since the new Pipeline came into use in 2019.[1] The Pipeline has also created a reliable and secure source of water for the Broken Hill region, after many years of drought and water restrictions. However, people told us that Essential Water's infrastructure in Broken Hill is ageing and needs to be upgraded.

Essential Water's proposal outlined a number of projects it plans to do to repair and replace its ageing infrastructure. To test the need for these projects, we assessed how Essential Water is performing in key areas such as supply interruptions and rates of main breaks. While Essential Water receives a low number of complaints from customers, it has a high rate of main breaks and chokes. We consider our decisions on Essential Water's operating and capital costs will enable it to do the infrastructure repairs and upgrades it outlined in its proposal.

Some people also thought Essential Water could improve its customer engagement and consultation.[2] We are introducing a new regulatory framework for the next price review, which will encourage Essential Water to better:

- engage with customers to help shape the services it delivers
- allow customers to be more involved in informing its decision-making processes
- embed customer preferences in its decisions and pricing proposals.

1.5 Affordability is a key concern for Essential Water customers

Stakeholders supported our decision to keep most of Essential Water's prices stable.[3] However, some were concerned about the affordability of those prices if we adjusted them for inflation each year, especially the impact this could have on those experiencing socio-economic disadvantage.[4] Broken Hill City Council proposed we consider capping the inflation increase.[5]

While we do not agree with proposals to cap the annual inflation adjustment to prices, we acknowledge the current environment of high inflation is putting pressure on household budgets. However, we need to balance this with Essential Water being able to recover its costs so it can continue to provide critical water and wastewater services in Broken Hill.

We have reviewed Essential Water's costs and identified savings. Through this process we are able to limit most price increases to inflation only, while ensuring Essential Water has sufficient revenue to cover its necessary costs. When compared with similar utilities, this means typical bills in Broken Hill would still be in the middle range of what households pay in other regional areas.

We recognise that prices increasing for inflation could have substantial impacts on some customers, including pensioners. We are conscious the pensioner rebate available to Essential Water customers has not increased for many years. Therefore, we have recommended the NSW Government review the appropriateness of pensioner concessions for water and wastewater bills across the state.

The WaterNSW Pipeline subsidy provides some assistance with affordability. We found it costs Essential Water around $4,100 per customer per year to provide water and wastewater services in Broken Hill, but customers currently pay around half that cost. The rest is paid for by NSW taxpayers through a subsidy that covers the cost of the WaterNSW Pipeline. The NSW Government has confirmed it will continue this existing funding commitment over the upcoming determination period, so that Essential Water's prices do not increase as a result of the WaterNSW Pipeline.[6]

We have recommended Essential Water work with NSW Government agencies and explore options to provide customers with greater long-term certainty about the status of the WaterNSW Pipeline subsidy and to reflect this in its next pricing proposal under our new regulatory framework.

1.6 Broken Hill faces unique challenges around accessing and using water

During our consultations with the community, many people outlined the environmental pressures that are unique to Broken Hill. The region relies on water to manage the hot and dry climate, as well as mitigate elevated lead levels in the soil and air. Therefore, water access and use in the Broken Hill region is an important concern for the community.

We were told that activities requiring water, such as maintaining greenspaces and using water to reduce exposure to lead, could become unaffordable if prices were to increase.[7] People were also concerned that reducing water use could negatively impact on investment in Broken Hill and skilled workers moving to the region.[8]

We recognise reducing water use in Broken Hill may not be in the public interest, given its important role in lead suppression. Therefore, being able to access and use affordable, safe and reliable water has a critical on impact on health and wellbeing in the region. It also affects the liveability of Broken Hill and its ability to generate sustainable employment and investment.

In this current price review, we are generally keeping prices stable, which assists with affordability. For the next price review, we plan to introduce our new regulatory framework. This framework is centred around delivering customer value. We expect Essential Water to consult with its customer about their priorities for water access and use, as well as their preferences around water bills.

Essential Water should ensure its consultation includes residential, non-residential and mining customers. This will help Essential Water to identify how its proposal fits in with their priorities and preferences, so it can promote better outcomes for its customers.

Our pricing decisions are one part of the broader approach required to facilitate water access and use which is in the best interests of customers and the community. We agree with the view from stakeholders that a holistic approach is required.

We consider it is a priority for Essential Water, Broken Hill City Council and key government agencies – such as the Department of Planning and Environment and NSW Health – to work together to develop a draft water plan for Broken Hill for consideration by the NSW Government. The plan should identify the optimal level of water usage in Broken Hill to mitigate the health risks posed by lead dust and consider a longer-term approach to the NSW Government subsidy for the WaterNSW pipeline. We encourage Essential Water to be a proactive participant in development of this plan and in consultation with stakeholders and customers.

1.7 Our decisions on water and wastewater prices for Essential Water customers

Table 1.1 sets out our decision on Essential Water's water prices, before inflation.

- We are holding most water usage prices constant, apart from the usage prices for untreated water for EW Pipeline customers and chlorinated water customers. These prices will continue to gradually increase towards the untreated water usage price that most customers pay.
- We are holding the water service prices constant.

Table 1.1 Decision on water prices ($2021-22) – without inflation

Prices ($2021-22)	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	% change from current to 2025-26
Usage prices ($/kL)						
Treated	1.88	1.88	1.88	1.88	1.88	0.0%
Untreated[a]	1.65	1.65	1.65	1.65	1.65	0.0%
Untreated (EW Pipeline customers)[b]	1.06	1.14	1.23	1.31	1.40	31.8%
Chlorinated[c]	1.40	1.46	1.53	1.59	1.65	17.9%
Service prices ($/year)						
Residential	342.89	342.89	342.89	342.89	342.89	0.0%
Non–residential meter based 20mm price[d]	342.89	342.89	342.89	342.89	342.89	0.0%
• 25mm connection	535.78	535.78	535.78	535.78	535.78	0.0%
• 40mm connection	1,372	1,372	1,372	1,372	1,372	0.0%
• 50mm connection	2,143	2,143	2,143	2,143	2,143	0.0%
• 80mm connection	5,486	5,486.24	5,486	5,486	5,486	0.0%
• 100mm connection	8,572	8,572	8,572	8,572	8,572	0.0%

Prices ($2021-22)	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	% change from current to 2025-26
• 150mm connection	19,288	19,288	19,288	19,288	19,288	0.0%
Mines ($'000s)						
• Perilya	2,408	2,408	2,408	2,408	2,408	0.0%
• CBH	581	581	581	581	581	0.0%

a. Untreated water is supplied to customers in Broken Hill, including Broken Hill City Council and the mines.
b. Customers along the EW Pipelines (i.e. the Menindee, Stephens Creek and Umberumberka pipelines) are connected to the Mica Street reticulation network in Broken Hill. They receive untreated water sourced from the Murray River via the WaterNSW Pipeline.
c. Chlorinated water is supplied to residential and non-residential customers in Silverton and Sunset Strip.
d. The meter-based prices are set with reference to the 20mm meter price using the following formula: (meter size)^2 x 20mm meter price / 400. We have calculated service prices for larger meter sizes using this formula.
Source: IPART analysis.

We adjust Essential Water's prices each year for inflation. Table 1.2 shows our decisions on water prices to apply from 1 January 2023, including inflation of 5.1%.

Table 1.2 Decision on water prices ($2022-23) – with inflation

	2022-23	Change from current to 2022-23
Usage prices ($/kL)		
Treated	1.98	5.1%
Untreated	1.73	5.1%
Untreated (EW Pipeline customers)	1.20	13.5%
Chlorinated	1.54	9.8%
Service prices ($/year)		
Residential	360.38	5.1%
Non – residential meter based 20mm price[d]	360.38	5.1%
• 25mm connection	563.09	5.1%
• 40mm connection	1,442	5.1%
• 50mm connection	2,252	5.1%
• 80mm connection	5,766	5.1%
• 100mm connection	9,010	5.1%
• 150mm connection	20,271	5.1%
Mines ($'000s)		
• Perilya	2,531	5.1%
• CBH	611	5.1%

Source: IPART analysis.

Table 1.3 shows our decision is to keep all wastewater prices constant and increase by inflation only.

Table 1.3 Decision on wastewater prices ($2021-22) – without inflation

Prices ($2021-22)	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change from current to 2025-26 (%)
Usage price ($/kL)						
Non-residential	1.34	1.34	1.34	1.34	1.34	0.0%
Service prices ($/year)						
Residential	546.37	546.37	546.37	546.37	546.37	0.0%
Non–residential[a]						
• 20mm connection	608.24	608.24	608.24	608.24	608.24	0.0%
• 25mm connection	950.38	950.38	950.38	950.38	950.38	0.0%
• 40mm connection	2,433	2,433	2,433	2,433	2,433	0.0%
• 50mm connection	3,802	3,802	3,802	3,802	3,802	0.0%
• 80mm connection	9,732	9,732	9,732	9,732	9,732	0.0%
• 100mm connection	15,206	15,206	15,206	15,206	15,206	0.0%
• 150mm connection	34,214	34,214	34,214	34,214	34,214	0.0%

a. The meter-based prices are set with reference to the 20mm meter price using the following formula: (meter size)^2 x 20mm meter price / 400. We have calculated service prices for larger meter sizes using this formula.

We have calculated service prices for larger meter sizes based on this formula, using a standard discharge factor of 100% as per Essential Water's proposal.
Source: IPART analysis.

Table 1.4 shows our decisions on wastewater prices to apply from 1 January 2023, including inflation of 5.1%.

Table 1.4 Decision on wastewater prices ($2022-23) - with inflation

	2022-23	Change from 2022-23 (%)
Usage price ($/kL)		
Non-residential	1.41	5.1%
Service prices ($/year)		
Residential	574.23	5.1%
Non – residential[a]		
• 20mm connection	639.26	5.1%
• 25mm connection	998.84	5.1%
• 40mm connection	2,557	5.1%
• 50mm connection	3,995	5.1%
• 80mm connection	10,228	5.1%
• 100mm connection	15,982	5.1%
• 150mm connection	35,958	5.1%

Source: IPART analysis.

1.8 Structure of our report

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

Chapter	
02	outlines the context and regulatory setting for the review, including decisions we make before setting prices, such as the form of regulation, risk sharing mechanisms, the length of the determination period, and our approach to calculating the revenue requirement
03	explains our decisions on operating expenditure allowances
04	explains our decisions on capital expenditure which informs capital allowances
05	sets out our decisions on the other cost allowances and total Notional Revenue Requirement (NRR)
06	explains our decisions on forecast water sales and customer numbers used to set prices
07-09	set out our price structure decisions and prices for water, wastewater and other services
10-11	present customer bill impacts of our pricing decisions, and implications on Essential Water and the environment.

1.9 List of decisions

8.	To expand Essential Water's existing output measures to align with current best practice as shown in Table 4.5.	54
9.	To set the notional revenue requirement at $179.9 million over the 2022 determination period as shown in Table 5.1.	57
10.	We calculate the regulatory asset base for 2018-19 to 2025-26 by using: – a 2019-2020 opening regulatory asset base of $123.8 million. The regulatory asset base for each year is shown in Table 5.3 – $35.7 million (nominal) of prudent and efficient historical capital expenditure added to the RAB over the 2019 determination period (Chapter 4) – $77.3 million of prudent and efficient forecast capital expenditure added to the RAB over the 2022 determination period (Chapter 4) – Essential Water's reported historical and forecast cash capital contributions as shown in Table 5.2 – Essential Water's reported historical and forecast asset disposals of zero.	59
11.	To calculate the allowance for return of assets (regulatory depreciation), using: – a straight-line depreciation method – for existing assets, the rolled forward asset lives from the 2019 determination period as listed in Table 5.5 – for new assets, the asset lives listed in Table 5.5.	61
12.	To set the allowance for return of assets at $16.7 million over the 2022 determination period as shown in Table 5.6.	61
13.	To set an allowance for return on assets of $22.1 million over the 2022 determination period (shown in Table 5.7). This is calculated by using: – the RAB values shown in Table 5.4 – a real post-tax weighted average cost of capital of 2.8% – a sampling date of 31 March 2022 for market observations as outlined in Appendix D.	63
14.	To set a true-up for differences between the forecast and actual cost of debt over the 2019 determination period of -$1.3 million.	66
15.	To use a true-up for differences between the forecast and actual cost of debt over the 2022 determination period in the next Determination.	66
16.	To set the working capital allowance for the 2022 determination period as shown in Table 5.8.	67
17.	To set the tax allowance as shown in Table 5.9, using: – a tax rate of 30% – IPART's standard methodology.	68
18.	To include $0.6 million in the NRR to account for differences between the forecast and actual water sales over the 2019 determination period.	69
19.	To accept Essential Water's proposed customer numbers and total water sales volumes over the 2022 determination period, as show in Table 6.1 and in Table 6.2, respectively.	78
20.	To accept Essential Water's proposed wastewater volumes for non-residential customers as shown in Table 6.3.	78

36.	To remove volume-based prices for compliant Category 1 and Category 1a customers, as these customers are low risk and have a low impact on Essential Water's wastewater system.	112
37.	To set mass-based prices for Category 3 customers that either: – continue on the price transition path set in our 2019 review, or – where DPE has revised its guideline prices for a specific substance, transition mass-based prices for that substance to DPE's 2021 guideline price.	114
38.	To set non-compliant mass-based prices for Category 3 customers as per Essential Water's Liquid Trade Waste Policy for: – BOD5 where the discharger fails to comply with acceptance limits – pH where the discharger is outside of the approved range, and – All other substances where the discharger fails to comply with acceptance limits	114
39.	To subtract $395,000 per year from Essential Water's wastewater notional revenue requirement. This represents our forecast of the revenue Essential Water would recover from trade waste customers if it were charging trade waste prices that align with DPE's guideline prices.	115
40.	To hold the current miscellaneous prices constant (before inflation) over the 2022 determination period. This means it would increase by the rate of inflation only.	116
41.	To continue not setting recycled water prices.	117
42.	To deduct 50% of the revenue received from recycled water sales from Essential Water's notional revenue requirement for regulated services.	117
43.	To accept Essential Water's proposal to maintain the current price structures for unmetered properties and unconnected properties.	118

1.10 List of recommendations

Recommendations

1.	Where possible, that Essential Water explore all cost saving opportunities, including the sharing of resources with Essential Energy in the future.	34
2.	That the NSW Government fund the difference ($85.5 million) between the total revenue to be recovered from customers and the target revenue via a direct contribution to Essential Water. This funding contribution would reflect: – the shortfall in revenue associated with transitioning the chlorinated water usage price to $1.65 per kL by 2025-26 – this is $16,300 over the 2022 determination period – revenue associated with transitioning usage price for untreated water (EW Pipeline customers) to $1.40 per kL by 2025-26 – this is $106,000 over the 2022 determination period – the shortfall in revenue associated with transitioning trade waste prices towards cost-reflective levels – this is $600,000 over the 2022 determination period	70

- the shortfall in WaterNSW Pipeline costs such that all other prices stay constant in real terms over the determination period - this is $84.8 million over the 2022 determination period.

3. That the NSW Government review the appropriateness of pensioner concessions for water and wastewater bills across the state. 86

4. That Essential Water work with NSW Government agencies and explore options to provide customers with greater long-term certainty about the status of the WaterNSW Pipeline subsidy. 88

5. Consistent with Recommendation 2, that the NSW Government fund the cost of transitioning untreated water (EW Pipeline customers) and chlorinated water usage prices over time. 91

6. Consistent with Recommendation 2, that the NSW Government fund the cost of transitioning trade waste prices over time. That is, the difference between the revenue Essential Water would recover under DPE's guideline prices and the revenue under the transitional prices set in the 2022 Determination. 115

Chapter 2

Regulatory settings

02

Summary of our decisions for regulatory settings

We set prices for a 4-year determination period

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

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

We continued to set maximum prices

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

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

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

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

We did not accept Essential Water's proposed cost pass throughs

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

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

2.1 We set prices for a 4-year determination period

Our decision is:

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

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

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

Last time we set prices in 2019, we decided a 3-year period was necessary because there was uncertainty with the operation of the new WaterNSW Pipeline and its impact on Essential Water's water demand forecasts.

Because the WaterNSW Pipeline has been in operation for 3 years and demand forecasts are more stable, Essential Water proposed a 5-year determination period for this review. It considered its operating conditions had become more stable, allowing it to forecast water use and costs with more certainty.[9]

While we agree there is less uncertainty in forecasts from the WaterNSW Pipeline, we consider the effect of a possible new large customer means there is still some uncertainty for Essential Water's demand forecasts. Essential Water is aware of a potential new mining customer, Cobalt Blue Mine, which is estimated to require 1GL per year from 2023 or 2024,[10] (an increase of around 20% in Essential Water's total water sales). We consider a 4-year period will provide an opportunity for Essential Water to assess the impact of the new mine.

In its submission to our Draft Report, Essential Water accepted our decision to set a 4-year determination period.[11]

2.1.1 New prices will commence on 1 January 2023

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

Our view is that both utilities and customers should be no better or worse off as a result of the 6-month delay. Therefore, in setting prices for this review, we have factored in:

- the final WACC that would have applied had we set prices from 1 July 2022, and
- an adjustment for foregone inflation in the period from 1 July 2022 to 31 December 2022.

We outline this adjustment in section 5.10.

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

2.2 We continued to use price caps

Our decision is:

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

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

Our decision is to accept Essential Water's proposal to continue to set maximum prices.[12] We consider price caps provide transparency and pricing certainty to customers and Essential Water. Price caps also help ensure prices reflect efficient costs and reflect the long-run cost of providing the service.

In its submission to our Draft Report, Essential Water accepted our decision to set price caps in each year of the determination period.[13]

No stakeholders suggested alternative forms of regulation.

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

2.3 We used the building block approach

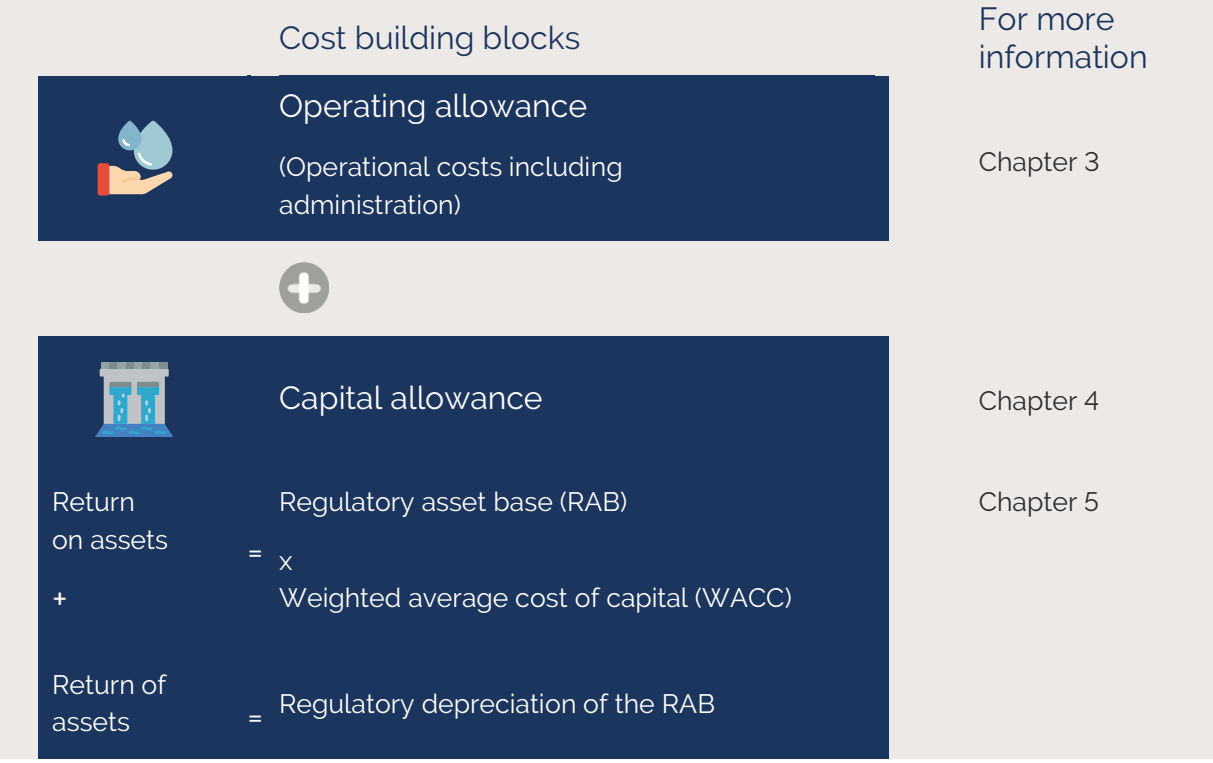
We continued to use the building block approach to calculate Essential Water's notional revenue requirement. This approach breaks down Essential Water's costs into the following components (or building blocks):

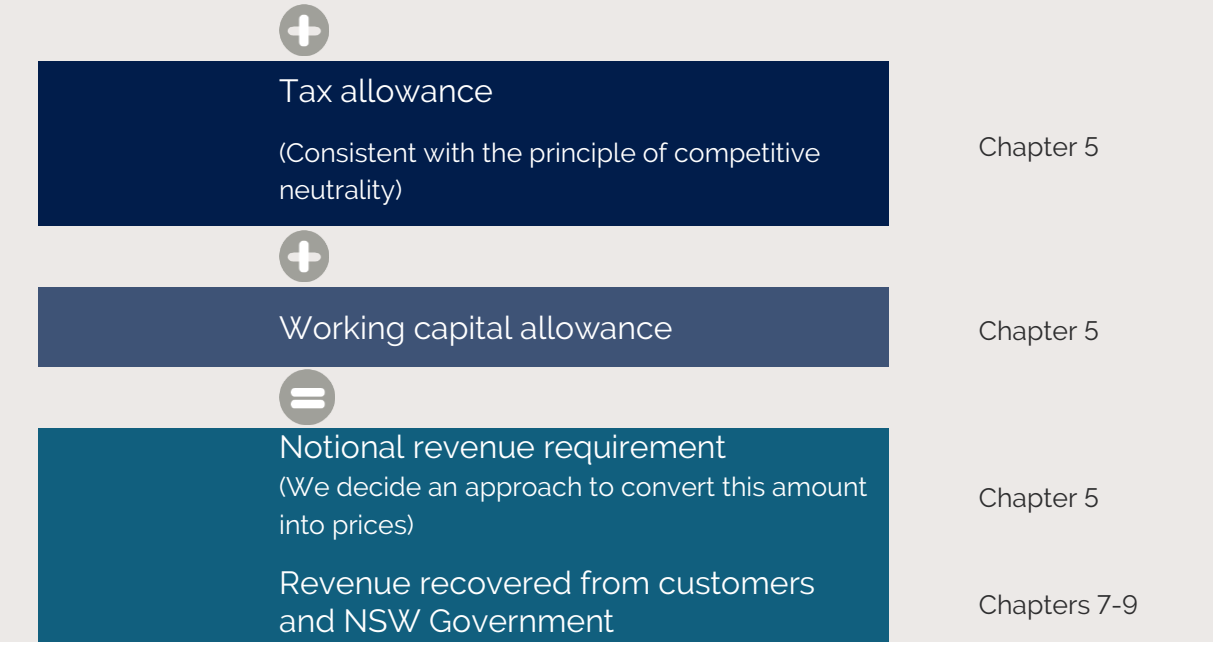
- **operating allowance**, to cover costs such as labour and administration costs
- **capital allowance**, comprised of:
  - return on assets that Essential Water uses to provide its services
  - regulatory depreciation (or a return of the assets that Essential Water uses to provide its services), which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

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

We then convert Essential Water's notional revenue requirement into prices by setting the target revenue requirement for each year – that is, the actual revenue we expect Essential Water to generate from prices and charges for that year. We consider a range of factors including price levels, the rate prices would change and any other impacts on Essential Water and water users. Figure 2.1 shows our approach to calculating the notional revenue requirement and how we set prices.

Figure 2.1 The building block approach





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

Our decision is:

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

Essential Water proposed mechanisms to 'pass-through' unexpected costs to its customers if specific events occur (e.g. natural disaster, regulatory changes).[14]

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

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

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

In its submission to our Draft Report, Essential Water accepted our decision to not include its proposed cost pass-throughs.[15]

2.5 We retained the current efficiency carryover mechanism

Our decision is:

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

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

Essential Water did not propose to activate the efficiency carryover mechanism for the 2019 determination period. It also did not propose changes to the efficiency carryover mechanism for the 2022 determination period.[16] We have accepted Essential Water's proposal and have maintained the efficiency carryover mechanism for operating expenditure for the 2022 determination period.

In its submission to our Draft Report, Essential Water accepted our decision to continue the efficiency carryover mechanism for operating expenditure.[17]

2.6 We assessed expenditure using a 3-step process

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

Step 1 – Reviewing proposed activities and costs

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

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

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

Step 3 – Reviewing available data to capture possible future efficiencies

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

Chapter 3

Operating expenditure

03

Summary of our decisions for operating expenditure

We accepted most of Essential Water's proposed operating expenditure for the next 4 years and set the allowance at $55 million

After considering Essential Water's proposal, stakeholder submissions and our consultants' expenditure review, our decision is to accept most of the expenditure proposal and set the allowance for operating expenditure at $54.6 million over the 2022 determination period. However, we found some opportunities to reduce operating expenditure in later years. For example, we have incorporated cost savings that were originally planned for but were not included in the proposal. We have also encouraged the business to pursue productivity-enhancing activities over the next 4 years by setting annual targets for the business.

We set operating expenditure 7% higher than our last review in 2019

We set operating expenditure of around $14 million per year over the 2022 determination period. This is around 7% per year higher than the average expenditure used to set prices in 2019. The allowance reflects the business' operating constraints. While Essential Water's proposal shows lower materials and energy costs, the business has limited ability to significantly reduce the rest of its day-to-day costs.

In providing water and wastewater services to customers, Essential Water incurs 2 types of costs:

- operating expenditure, which is the day-to-day costs of running its business and maintaining the infrastructure and equipment to provide services (e.g. staff wages, electricity, contractors, water transportation costs)
- capital expenditure, which is the investments it makes to buy, build and renew the infrastructure and equipment it uses to provide services (e.g. building or upgrading a wastewater treatment plant).

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

This chapter outlines our assessment of Essential Water's proposed operating expenditure. Chapter 4 outlines our assessment proposed capital expenditure. Operating expenditure makes up around 40% of the notional revenue requirement (NRR) each year.

To assist us, we engaged AECOM to help us assess Essential Water's historical and proposed costs and submissions to our Draft Report. Our decisions represent the overall level of operating expenditure that we consider sufficient to efficiently provide services to customers over the 2022 determination period. They are based on the best available data at the time of the review. The consultants' reports can be found on our website.

In most of our analysis in this chapter, we have excluded the cost of using the WaterNSW Pipeline. These costs are not recovered through prices paid by customers. Rather, these costs are currently paid by the NSW Government. We have set out why the WaterNSW Pipeline is being used at the end of this chapter. More details on costs are set out in Chapter 5 of this document and in our concurrent review of costs and prices for the WaterNSW Pipeline.

Essential Water proposed operating expenditure of $59 million for the 2022 determination period, averaging around $15 million per year and excluding costs for transporting water using the WaterNSW Pipeline.[18] This is higher than the average operating expenditure of $13 million per year included in prices set for the 2019 determination period.

Overall, our decision is to set Essential Water's efficient total operating expenditure at $55 million (see Table 3.1). This is 7% higher than the expenditure we set in our last review in 2019, and 8% lower than Essential Water's proposed operating expenditure.

Our decision is:

5. To set Essential Water's total operating expenditure allowance for the 2022 determination period at $55 million, as shown in Table 3.1.

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

	Average 2019[a]	2022-23	2023–24	2024–25	2025–26	Total 2022[b]
Essential Water actuals and proposal						
Water	12.2[c]	12.9	12.1	11.9	12.0	48.9
Wastewater	2.7[c]	2.6	2.6	2.5	2.6	10.3
Total	14.9[c]	15.5	14.7	14.5	14.6	59.3
IPART 2019 decision and 2022 decision						
Water	10.4[d]	12.3	11.4	11.1	10.2	44.8
Wastewater	2.4[d]	2.5	2.5	2.5	2.3	9.8
Total	12.8[d]	14.8	13.8	13.6	12.4	54.6
Difference (total)	*-2.1[d]*	*-0.7*	*-0.8*	*-0.9*	*-2.2*	*-4.6*
Difference (total, %)	*-14%*	*-5%*	*-6%*	*-6%*	*-15%*	*-8%*

a. This column represents the average operating expenditure per year during the 2019 determination period.
b. This refers to the sum of operating expenditure for the 2022 determination period.
c. This represents the average actual operating expenditure for 2019-20 and 2020-21 and estimates for 2021-22 reported by Essential Water.
d. This represents the average of allowed operating expenditure per year as set out in the 2019 Determination.

Note: This table excludes the cost of transporting water using the WaterNSW Pipeline. Refer to Chapter 5 for more details. The figures may not add up due to rounding.

Source: IPART analysis.

3.1 Essential Water spent more than expected over the last 3 years

Over the 2019 determination period, Essential Water reported around $15 million per year of actual operating expenditure (excluding WaterNSW Pipeline costs).[19] This amount is around $2 million (16%) per year higher than the allowance we used to set prices.

This increase was mainly driven by higher labour, fleet and corporate overhead costs.[a] AECOM found Essential Water had limited ability to achieve labour savings because of operating constraints.[20] Fleet costs were higher because of additional spending on vehicles to improve safety and gradually upgrade its fleet.[21] Meanwhile, corporate overhead costs were higher because of increased investment to transform the corporate system.[22]

Offsetting these higher costs, Essential Water achieved lower materials and energy costs. Depending on how water is sourced for the community, Essential Water could have higher (or lower) materials and energy costs if water is sourced from its own supply infrastructure (or by transporting water using the WaterNSW Pipeline). AECOM found Essential Water had mostly used the WaterNSW Pipeline to transport water for the community over the last 3 years.[23]

AECOM found actual costs over the last 3 years were mostly efficient.

3.2 Essential Water's proposed increases reflect its operating constraints

Essential Water proposed operating expenditure of around $15 million per year (or $59 million in total) over the 2022 determination period (see Figure 3.1), which is:

- $2.0 million (16%) per year *higher* than the average expenditure used to set prices in 2019
- $0.1 million (-0.5%) per year *lower* than the average of Essential Water's reported actual expenditure per year over the 2019 determination period.[b]

Of the proposed total amount, around $12 million per year relates to providing water services and $3 million per year relates to wastewater services.

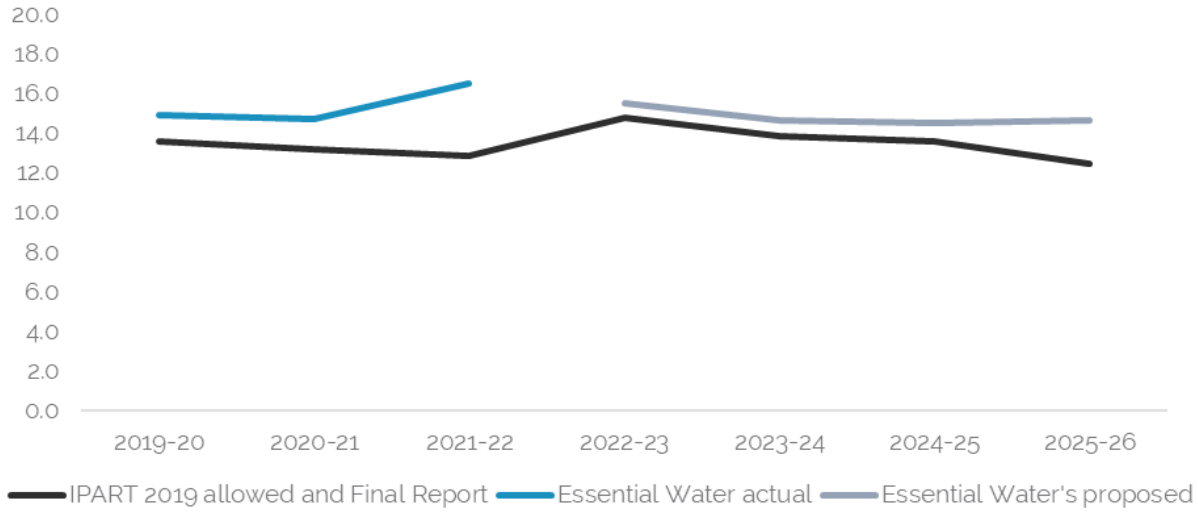
Essential Water's proposed operating expenditure reflects the challenges and practical constraints of operating in Broken Hill:[24]

> "Our forecast operating and maintenance expenditure for the next five years is above IPART's allowances over the last three years, but slightly below current levels. Our forecasts reflect the practical constraints we face serving a small customer base, across a large area in a remote location, and the efficient costs of operating and maintaining our network and supplying services to our customers…"

[a] AECOM found the higher labour costs were due to project delays, increased incidence in main bursts and a mandate from the NSW Government preventing Essential Water from making redundancies in 2020-21. These factors prevented Essential Water from achieving lower labour costs that were assumed in the 2019 price review.

[b] These figures differ from the Draft Report. The final model used an updated inflation figure to adjust 2019 actuals to $2021-22.

Figure 3.1 Operating expenditure allowance compared with Essential Water's actual and proposed operating expenditure ($ millions, $2021-22)



Source: IPART analysis.

3.3 We found opportunities to set expenditure 8% lower than proposed

We have largely accepted Essential Water's proposed operating expenditure (excluding WaterNSW Pipeline costs). We considered our consultants' recommendations on expenditure, Essential Water's responses to our draft decisions, Essential Water's responses to our consultants' findings, and feedback from stakeholders via submissions and at the Public Hearing.

Over the 2022 determination period, our decision is to slightly reduce Essential Water's total operating expenditure by $4.6 million to $54.6 million (i.e. around $14 million per year). This is:

- $1.2 million (8%) lower per year than proposed by Essential Water
- $0.9 million (7%) higher per year than the allowance we used to set prices in 2019.

Based on this, around $11 million per year would relate to providing water services and $2 million per year would relate to wastewater services.

Table 3.2 summarises our adjustments to Essential Water's total proposed operating expenditure and is based on our findings that:

- there is some opportunity to reduce labour and support costs in future years
- there is scope to reduce hire service costs by ensuring one-off costs are removed
- there is scope to reduce fleet costs towards the end of the determination period
- there is scope to reduce corporate overheads to reflect the other adjustments we made
- Essential Water could make ongoing efficiency savings over the determination period.

These findings are discussed in detail in the sections below. In section 3.4, we test our decision by comparing Essential Water's operating expenditure against other water utilities in NSW.

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

Expenditure items	2022-23	2023-24	2024-25	2025-26	Total
Essential Water proposal					
Total excluding WaterNSW Pipeline costs	15.5	14.7	14.5	14.6	59.3
IPART decision					
Labour and support cost allocation	-0.1	-0.1	-0.3	-0.4	-1.0
Hire services	-0.4	-0.5	-0.1	-0.5	-1.5
Fleet	0.0	0.1	-0.2	-0.2	-0.4
Corporate overheads and corporate transformation	0.0	0.0	-0.1	-0.7	-0.8
Continuing efficiency	-0.1	-0.2	-0.3	-0.3	-0.9
Total	**14.8**	**13.8**	**13.6**	**12.4**	**54.6**
Difference from proposal (total, %)	*-4.5%*	*-5.6%*	*-6.3%*	*-15.1%*	*-8.5%*
Difference from proposal (total, $)	*-0.7*	*-0.8*	*-0.9*	*-2.2*	*-4.6*

Note: The figures may not add up due to rounding.

Source: IPART analysis.

There is some opportunity to reduce labour and support costs in future years

Labour costs comprise around 50% of Essential Water's total proposed operating expenditure (excluding WaterNSW Pipeline costs) over the 2022 determination period.[25]

Over the last 3 years, Essential Water spent more on labour costs than expected in our 2019 review. Essential Water expects this trend to continue over the next 4 years because:[26]

- it requires more labour resources to undertake reactive works due to deteriorating assets
- it has limited ability to reduce its labour force. It has an experienced workforce that needs to be managed appropriately as people retire to reduce the risk of losing skills and institutional knowledge.

AECOM found Essential Water's proposed costs to be generally efficient and recommended small adjustments in 2024-25 and 2025-26. AECOM found several initiatives in place that should reduce costs towards the end of the determination period. Specifically, AECOM found the decommissioning of the Menindee Pipeline and completion of the Wills Street wastewater treatment plant should help reduce Essential Water's full-time equivalents (FTEs) based on the original business cases.[27] During the expenditure review, Essential Water contended that any reductions in FTEs would result in higher operating risks such as issues meeting service standards. While AECOM acknowledged this potential risk, it maintained its recommendation.[28]

AECOM also identified that sharing resources between Essential Water and Essential Energy could help address barriers in attracting and retaining skilled staff in the region. While Essential Water noted there were barriers to sharing resources with Essential Energy (such as different skill sets, resource shortages and Essential Energy's full cost recovery basis for services),[29] AECOM found these barriers could be considered transitory and subject to change over time.[30]

In its submission to the Draft Report, Essential Water asked IPART to reconsider its draft decision to reduce its proposed labour costs. It reiterated the constraints it faces in maintaining service standards and skilled labour while delivering efficiency savings.[31] Further, Essential Water stated it had already achieved some labour cost efficiencies due to the de-pressurisation of the Menindee Pipeline in 2019.[32]

Our decision is to reduce Essential Water's proposed labour costs by $0.5 million and support costs by $0.5 million over the 2022 determination period (i.e. a reduction of $1.0 million) to $30.3 million in total. This is an on-balance decision which recognises AECOM's recommendations and Essential Water's submission to the Draft Report.

While we agree with AECOM's findings that labour costs should reflect savings that have been identified in business cases, we consider Essential Water has made ongoing efforts to find labour efficiencies despite its operating constraints. In the Draft Report, we reduced labour and support costs by $1.4 million. After factoring in Essential Water's response to our Draft Report, we made a decision to increase the allowance by $0.4 million and instead reduce these costs by $1.0 million.

We also encourage Essential Water to explore opportunities for sharing resources with Essential Energy where possible. At present, we recognise Essential Water's capacity to find opportunities for sharing resources can be limited. We understand it is good business practice to explore productivity-enhancing options and encourage Essential Water to consider this when its circumstances have changed.

We recommend:

1. Where possible, that Essential Water explore all cost saving opportunities, including the sharing of resources with Essential Energy in the future.

There is scope to reduce hire service costs by ensuring one-off costs are removed

Essential Water's proposed total hire service costs of $5.5 million are broadly based on historical costs.[c] AECOM generally prefers a bottom-up analysis of future requirements when forecasting costs instead of using historical costs. However, Essential Water was unable to provide information on its future contractor requirements.[33]

AECOM assessed the information provided and recommended to remove one-off works in calculating historical costs.[d] As a result, AECOM recommended to set the efficient hire service cost at around $0.8 million per year over the 2022 determination period. In addition, AECOM recommended to accept the proposed one-off cost of $0.5 million in 2022-23 for Essential Water to undertake its Water Storages Strategy.

[c] Essential Water added one-off future works to its historical calculations. For example, Essential Water added its proposed one-off preparation cost for Water Storages Strategy Plan in 2022-23 to its historical calculation.

[d] AECOM observed high expenditure in 2017-18 due to one-off costs for project assessments and business cases for new supply arrangements. AECOM also excluded one-off costs for IWCMS and regulatory compliance from its calculations.

In its submission to the Draft Report, Essential Water asked IPART to reinstate a portion of its proposed hire service costs for 2024-25 ($0.4 million). This would support the preparation of its next pricing proposal and help improve its customer engagement ahead of the new regulatory framework.[34]

AECOM's supplementary report found clear drivers for this request and considered the costs prudent, noting customer value is a key focus under the new regulatory framework.[35] However, AECOM also found that it had included one-off costs for regulatory support from 2021 in Essential Water's historic baseline. AECOM subsequently excluded these one-off costs from the baseline (around $0.3 million) and recalculated its recommended hire service costs for the 2022 determination period.[36]

Our decision is to reduce Essential Water's proposed hire service costs by $1.5 million to $3.9 million, which is $0.07 million higher than the hire service costs in our Draft Report. We considered Essential Water's request to include additional costs to improve customer engagement, as well as AECOM's recommendations around these costs. We also considered feedback from our public hearing that customers and the community would like to be more engaged by Essential Water in its future pricing proposals.

At the next price review, we expect Essential Water to clearly demonstrate how its customer engagement is appropriate and provides genuine value for customers. We also expect Essential Water to explain how it has used its existing operations and processes – together with new approaches – to improve its customer consultation.

There is scope to reduce fleet costs towards the end of the determination period

Essential Water's fleet costs are an allocation from Essential Energy based on staff numbers and project hours. For the 2022 determination period, Essential Water proposed total fleet costs of $5.7 million, with higher costs in the final 2 years.[37]

AECOM analysed the proposed fleet costs and approach, and found several key outcomes:[38]

- AECOM analysed the ratio of proposed fleet costs to Essential Water's FTEs. It found the ratios to be fluctuating, which were not in line with the expected stable outlook for FTEs that underpins Essential Water's proposal.
- AECOM observed increased investments in Essential Water's vehicle fleet, which started during the 2019 determination period. AECOM expected these investments would deliver efficiencies over the 2022 determination period (e.g. lower costs for maintaining the fleet). However, AECOM could not find these efficiencies over the next 4 years.
- AECOM observed fleet costs in the last 2 years of the 2022 determination period to be substantially higher than in earlier years.

Therefore, AECOM considered the proposal was inefficient and recommended removing high costs in 2024-25 and 2025-26.[39]

Essential Water disagreed with IPART's draft decision to reduce fleet costs.[40] It outlined that AECOM's comparison of fleet costs to FTEs reflected a misunderstanding of cost drivers. Further, it disputed AECOM's assumption that 2019 fleet investments would drive savings over the 2022 determination period, noting a portion of its 2019 fleet investments was to improve safety measures rather than drive efficiencies.[41]

Our decision is to reduce proposed fleet costs by $0.38 million to $5.34 million. We have mostly accepted Essential Water's proposed fleet costs, however we agree with AECOM that there is scope to slightly reduce costs in 2024-25 and 2025-26.

There is scope to reduce corporate overheads to reflect our other adjustments

Essential Water proposed a total corporate overhead cost of $18 million over the 2022 determination period, with $8.8 million (49%) allocated to operating expenditure and the remaining $9.2 million (51%) to capital expenditure (see Box 3.1). This is higher than previous corporate overheads used to set prices in the 2019, but lower than costs incurred by Essential Water over the 2019 determination period.[42] Box 3.1 explains Essential Water's approach for its proposed corporate overheads.

Box 3.1 Our understanding of Essential Water's approach

Essential Water took the following steps to set its proposed corporate overheads:

1. Allocate corporate overheads based on Essential Water's share of Essential Energy's total direct costs.
2. Remove direct costs from Step 1 that are unrelated to Essential Water's services.
3. Apply a 50% reduction factor to any individual cost item allocated to Essential Water that is more than $0.2 million.

Source: Essential Water, Essential Water Pricing Proposal, June 2021, p 64.

AECOM assessed the proposal and raised several concerns:[43]

- The use of direct cost as an allocator for corporate overheads may not be appropriate at all times. This is because there are times when direct cost is not the causal driver for corporate overheads. However, AECOM indicated that the cost of setting alternative allocators may outweigh the benefits.[44]
- The pricing proposal indicated Essential Energy's corporate costs are increasing because of investments on transformational programs. But these programs should deliver cost savings over time. However, AECOM noted the pricing proposal, and subsequent information from Essential Water, did not explicitly quantify those savings.

- AECOM agreed with the approach of removing costs that are unrelated to water and wastewater services when allocating corporate overheads to Essential Water. However, AECOM noted the proposed 50% reduction on allocated costs over $0.2 million is arbitrary and temporary to achieve a broad allocation target of around 17%. While this is favourable in achieving lower costs, this presents a risk that costs could rise in future periods.

As a result, AECOM considered the proposed costs were broadly reasonable but recommended small adjustments:

- $0.2 million to proportionately reduce the operating corporate overheads as a result of AECOM's recommendations of lower labour, support, hire service and fleet costs.
- $1 million upward adjustments for capital corporate overheads as a result of AECOM's recommendations for capital expenditure.
- $0.6 million from 2025-26 to account for operating cost savings that could be realised as part of the transformation program.

Our decision is to set Essential Water's total corporate overheads at $18.6 million. We allocated around $8.4 million in operating expenditure and around $10.2 million in capital expenditure over the 2022 determination period (see Table 3.3).

Stakeholders supported our draft decision to gradually reduce corporate overheads over the determination period,[45] and one maintained that corporate overheads were too high and asked for more transparent management data.[46] Essential Water did not comment on our draft decisions for corporate overheads.

Table 3.3 Decision on corporate overheads ($ millions, $2021-22)

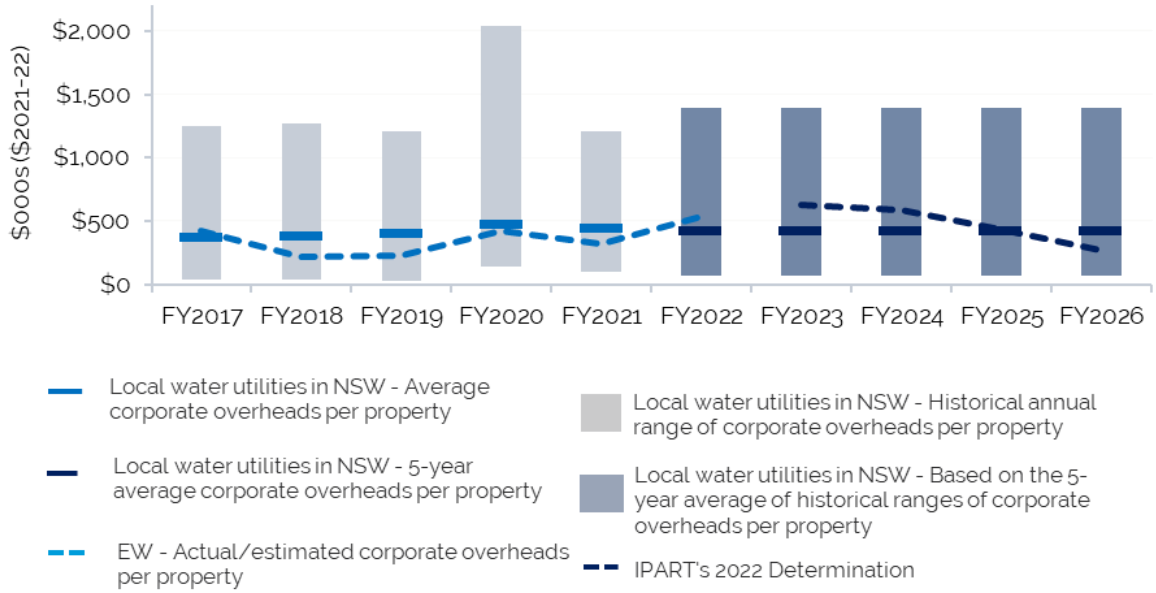
	Average 2019[a]	2022-23	2023–24	2024–25	2025–26	Total 2022[b]
Essential Water actuals and proposal						
Operating expenditure	2.3	2.4	2.2	2.1	2.0	8.8
Capital expenditure	2.8	3.0	3.2	2.2	0.8	9.2
Total	5.1	5.4	5.4	4.4	2.8	18.0
IPART 2019 decision and 2022 decision						
Operating expenditure	1.9	2.4	2.2	2.1	1.8	8.4
Capital expenditure	1.5	3.7	3.5	2.2	0.8	10.2
Total	1.9	6.1	5.7	4.2	2.6	18.6

a. This column represents the average corporate overheads that Essential Water reported as actuals during the 2019 determination period.
b. This refers to the sum of proposed corporate overheads for the 2022 determination period.

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

Our decision is based on AECOM's recommendations. To sense-check our decision, we compared Essential Water's actual total corporate overheads and our decisions against other local water utilities in NSW. We did the analysis on a per property basis. In Figure 3.2, we observed Essential Water's actual total corporate overheads were trending below the average cost in NSW in most years from 2016-17 to 2021-22. Under our decision for the 2022 determination period, Essential Water's total corporate overheads would be above the average cost in NSW in 2022-23 then decline below the average by 2025-26. Overall, we consider our decision is reasonable and in line with other utilities in NSW.

Figure 3.2 Comparison of Essential Water's total corporate overheads with other water utilities in NSW



Note: From FY2017 to FY2021 we used data from Essential Water's pricing proposal and compared them with DPE's local water utility performance monitoring data. From FY2022, we used the results of our decisions compared with 4-year averages from DPE's data.
Source: IPART analysis and the Department of Planning and Environment's local water utilities performance monitoring data.

We understand that customers and the community are interested in understanding more about the cost of the services they pay for as part of their bills. Therefore, we encourage Essential Water to engage with its customers on corporate overheads at the next price review under our new regulatory framework and address its allocation targets by considering a long-term approach to avoid arbitrary allocation.

Essential Water could make ongoing efficiency savings of $0.9 million

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

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

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

The continuing efficiency adjustment is based on our current methodology which reflects the long-run shift in the efficient frontier. This includes:

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

In its submission to the Draft Report, Essential Water asked IPART not to apply a continuing efficiency adjustment to its proposed expenditure. Essential Water noted its proposal was developed in a stable environment, and a continuing efficiency adjustment would be out-of-step with the current economic environment.[47]

We consider the continuing efficiency targets we have set are realistic and achievable. Adjusting for continuing efficiency is important because it ensures our prices capture the impact of innovation and new technologies that enable firms to do more with less inputs.

It is important to apply a continuing efficiency adjustment that reflects long-run expectations of productivity growth. This provides Essential Water with an incentive to pursue productivity-enhancing activities. We have not prescribed how Essential Water should achieve these efficiencies, so it has flexibility within the expenditure allowance to do so.

Therefore, we have maintained our decision to apply a continuing efficiency adjustment of 0.7% per year, totalling $0.9 million in efficiency savings over the 2022 determination period (see Table 3.4).

Table 3.4 Decision on continuing efficiency factors ($ millions, $2021-22)

Efficiency adjustment	2022-23	2023-24	2024-25	2025-26	Total
Continuing efficiency (cumulative %)	-0.7%	-1.4%	-2.1%	-2.8%	N/A
Continuing efficiency ($ million)	-0.10	-0.20	-0.29	-0.35	-0.9

3.4 We compared Essential Water's costs with other utilities

To sense-check our decisions, we compared the operating expenditure for Essential Water against other water utilities in NSW. We did the analysis on per property basis to compare how much the utilities spend on servicing each property in NSW.

As shown in Figure 3.3, we observed that Essential Water's historic costs were one of the highest in NSW before the WaterNSW Pipeline became operational in 2019. This is because Essential Water has a relatively large network of water and wastewater infrastructure that services a small customer base, which includes few mines, in a remote location in NSW.

Since 2019, Essential Water's operating expenditure per property (excluding WaterNSW Pipeline costs) has fallen but is still above the NSW average. Because Essential Water now sources most of its water from the WaterNSW Pipeline instead of its own infrastructure, its energy and materials costs have decreased. Over the 2022 determination, we expect Essential Water's operating expenditure to stay within the benchmark range and trend toward the NSW average. We consider our decision on efficient operating expenditure would give Essential Water enough time to lower its costs while managing the challenges of operating a business in a remote location with a dispersed, small customer base as outlined in Essential Water's submission.[48]

If we were to include the cost of the WaterNSW Pipeline in our analysis, Essential Water's operating expenditure per property would be the highest in NSW. However, the cost of using the WaterNSW Pipeline is recovered from the NSW Government instead. This means customers in the Broken Hill region currently do not pay for the WaterNSW Pipeline.

In its submission to the Draft Report, Essential Water noted care should be taken when comparing its costs to benchmark utilities because it operates in a unique environment.[49] We recognise Essential Water's concern, and we are open to improving our benchmark analysis in the future.

During the consultation period, some stakeholders indicated they would like to better understand what they pay for.[50] In the next price review, we encourage Essential Water to consider ways it can engage with its customers on this topic.

Figure 3.3 Analysis of our operating expenditure against other utilities

Note: From 2015-16 to 2021-22 we used data from Essential Water's pricing proposal and the Bureau of Meteorology's 2020-21 national performance report (NPR). From 2021-22, we used the results from our decisions and 5-year averages from the NPR.
This benchmark analysis looks at costs per property, which is different to how we set prices or analyse bill impacts.
Source: IPART analysis and the Bureau of Meteorology's 2020-21 national performance report.

3.5 The WaterNSW Pipeline will be used to meet water demand in Broken Hill

Historically, water supply for Broken Hill was dependent on water sourced from the Darling River via 120 km of pipeline and stored in Stephens Creek Reservoir. These pipeline and water storage assets are owned and operated by Essential Water.

Since 2019, Essential Water sourced the majority of its water supply needs by transporting water from the Murray River using the WaterNSW Pipeline. For the next 4 years, Essential Water proposes to continue to use the WaterNSW Pipeline to meet majority of customer water demand. Appendix C provides more information on Essential Water's water supply arrangements.

AECOM found this proposal is efficient because:[51]

- The Stephens Creek Reservoir is dry 60% of the time.
- By using the WaterNSW Pipeline more, Essential Water can reduce its spending on energy and materials (e.g. chemical treatments).
- This would result in lower operating risk for Essential Water. Essential Water advised that it needs to do more water testing and chemical dosing if water is obtained from multiple sources.

After considering the proposal and our consultants' findings, our decision is to accept the proposal to set efficient costs based on Essential Water using the WaterNSW Pipeline efficiently.

This decision has further implications in our price review:

- In Chapter 5, we discuss our decision on Essential Water's notional revenue requirements based on full efficient costs, which include the WaterNSW Pipeline costs.

- In Chapter 6, we discuss our decision on how much water would need to be transported using the WaterNSW Pipeline.
- In Chapters 7 and 10, we discuss the government subsidy arrangements for the use of the WaterNSW Pipeline and what it means for customer prices and bills.

Chapter 4

Capital expenditure and output measures

04

Summary of our decisions for capital expenditure

We accepted most of Essential Water's proposed past capital expenditure and set the allowance at $37 million

We found that Essential Water's capital expenditure over the 2019 determination period is mostly efficient and our decision is to largely accept it. Essential Water spent less than the allowance set by IPART for the 2019 Determination due to delaying the Wills Street wastewater treatment plant (WWTP) replacement and achieving savings on a project. We have reduced capital expenditure to reflect AECOM's views on reasonable timing for Essential Water's capital projects, and a reasonable allowance for capitalised corporate overheads in 2021-22.

We accepted most of Essential Water's proposed capital expenditure for the next 4 years and set the allowance at $77 million

Our decision is that Essential Water's proposed capital expenditure for the 2022 determination period is efficient. The forward-looking capital expenditure allowance considers project delays from the 2019 determination period and has been increased to reflect AECOM's views on reasonable timing for the Graziers' Pipeline project.

We expanded output measures to align with best practice

We found there is scope for Essential Water to improve reporting on its existing output measures and to expand these measures to better reflect customer priorities and align with best practice.

This chapter outlines our assessment of Essential Water's capital expenditure. It discusses:

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

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

The capital expenditure allowance we set for Essential Water does not represent the amount it is required to spend on specific capital projects. It represents our view on the overall level of capital expenditure (to be recovered through prices) that we consider reasonable to maintain or improve services over the determination period. Essential Water decides how to prioritise capital expenditure within a determination period.

As with operating expenditure, we engaged AECOM to review Essential Water's past and proposed capital expenditure. AECOM also reviewed Essential Water's performance against service standards (output measures) over the 2019 determination period. AECOM's report, which includes detailed analysis of Essential Water's capital expenditure, is available on our website. We also considered submissions from stakeholders in making our decisions.

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

4.1 Essential Water spent less than expected over the last 3 years

AECOM found that Essential Water's capital expenditure over the last 3 years is mostly efficient and that it delivered the Brine Pond decommissioning project at lower cost than initially estimated.[52] Essential Water also spent less than the allowance because it delayed capital expenditure on the Wills Street WWTP replacement and proposes to spend most of this money over the next 3 years instead.[53]

In our 2019 review, we set a capital expenditure allowance of around $56 million over 3 years for Essential Water to do a range of upgrades, as well as consequential works to integrate the WaterNSW Pipeline into its existing network. Essential Water proposed to spend around $49 million and completed many of these projects. The 13% underspend is mostly due to project delays for the Wills Street WWTP, for which Essential Water proposed to defer around $8 million to the 2022 determination period. AECOM agreed that deferring this project is reasonable, but also recommended further decreases of around $10 million to capital expenditure to reflect expected delays for the Graziers' Pipeline project.[54] The capital expenditure allowance for the 2022 Determination would be subsequently increased by around $10 million to reflect this additional timing adjustment. We agree with AECOM's recommended timing adjustments and have accepted its recommended capital expenditure allowance of $37 million for the 2019 determination period.

The Wills Street WWTP was built in the 1930s and needs to be replaced to meet environmental standards. It was delayed from the 2019 Determination because of COVID-19 and uncertainty around funding for the rest of the project.[55]

The Graziers' Pipeline project involves decommissioning the Menindee pipeline, supplying potable water to Sunset Strip from Menindee water treatment plant, and supplying 11 graziers from a new pipeline from Stephens Creek reservoir. It has been delayed due to heritage issues and community consultation processes.[56]

AECOM also recommended reducing capitalised overhead costs by around $2 million in 2021-22.[57] This is because capitalised overheads in 2021-22 are substantially higher than previous years and more than double the allowance set by IPART in the 2019 Determination.[58] Our decision is to accept AECOM's recommendation. Chapter 3 discusses our approach to reviewing Essential Water's corporate overheads in more detail.

Table 4.1 summarises all of AECOM's recommended adjustments to capital expenditure for the 2019 determination period and IPART's decision on total capital expenditure. Table 4.2 provides a breakdown of the capital expenditure by asset type.

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

Expenditure items	2019-20	2020-21	2021-22	Total
Essential Water proposal				
Actual capital expenditure	11.2	10	28[a]	49.2
AECOM recommendations				
Efficiency adjustments (corporate overheads)			-2.3	-.2.3
Adjustments for timing of Graziers' Pipeline project			-10.3[b]	-10.3
IPART decision				
Capital expenditure	11.2	10	15.4	36.7

a. In its June 2021 pricing proposal, Essential Water estimated to spend around $28 million in 2021-22 (i.e. the final year of the 2019 determination period). This estimated amount included the Graziers' Pipeline project. However, during the expenditure review, Essential Water identified that this project would need to be delayed. We found this reasonable and decided to shift this project from the 2019 determination period to the 2022 determination period as shown in note b.
b. AECOM has recommended a corresponding increase to capital expenditure for the 2022 determination period. It recommends a $6.75 million and $3.4 million increase in 2022-23 and 2023-24, respectively as shown in Table 4.3 below.

Source: IPART analysis.

Our decision is:

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

Table 4.2 IPART's decision on capital expenditure – 2019 determination ($ millions, $2021-22)

Asset type	2019-20	2022-21	2021-2022	Total
Water	7.6	6.3	8.6	22.5
Wastewater	0.7	1.3	2.1	4.1
Corporate overheads	0.8	1.4	2.5	4.8
Non-system (ICT)	1.0	0.8	1.6	3.4
Non-system (FFP & E)	0.2	0.3	0	0.6
Non-system (vehicles)	0.5	0	0.4	0.9
Non-system (buildings)	0.5	0.1	0.2	0.7
Total	**11.3**	**10.1**	**15.4**	**36.9**

Source: IPART analysis.

4.2 Essential Water proposed capital expenditure to upgrade ageing infrastructure

For the 2022 determination period, Essential Water proposed around $68 million in capital expenditure, made up of several capital projects to upgrade its ageing infrastructure. This is slightly lower than the amount of capital expenditure we set in the last review, when compared on an average annual basis.[a]

Key capital projects proposed by Essential Water include:

- replacing Wills Street WWTP (around $30 million)
- water and sewer reticulation repairs and replacements (around $11 million)
- Mica Street service reservoir replacement (around $3 million)
- Mica Street concrete remediation (around $2.5 million)
- Rocky Hill service reservoir refurbishment and replacement (around $2 million)
- non system expenditure on IT, motor vehicles, buildings, fittings, furniture, plant and equipment (around $6 million).[59]

Essential Water's pricing proposal outlines these projects in more detail.

4.3 Our decision is to accept Essential Water's proposed capital expenditure

AECOM found that most projects proposed by Essential Water are necessary and that proposed costs are reasonable, and so our decision is to largely accept Essential Water's proposal. We have decided to:

- increase the allowance to reflect our views on reasonable timing for project delays from the 2019 determination period
- slightly decrease the allowance to reflect our expectation that Essential Water should become more productive and find cost savings over time.

Our decisions on capital expenditure are discussed further in section 4.3.1.

Stakeholders who commented on capital expenditure generally agreed that these projects are necessary, but also raised concerns about recovering costs from customers. For example, Broken Hill City Council agreed that infrastructure repairs and renewals are important but preferred that these are funded through capital grants, rather than through prices paid by customers.[60]

Essential Water accepted our decisions on capital expenditure except for the continuing efficiency adjustment.[61]

[a] We set an average annual allowance of around $19 million over 2019 determination period. This compares to an annual average allowance of around $17 million over the 2022 determination period, expressed in $2021-22.

Essential Water's pricing proposal includes a capital grant of around $7 million for the Wills Street WWTP[62] project and the NSW Government has recently announced funding for the Graziers' Pipeline[63] and the WaterNSW Pipeline. Because there is already a range of assistance in place to keep water and wastewater prices in Broken Hill affordable, our view is that it is reasonable for customers to pay for other proposed capital projects.

In response to our Issues Paper, PIAC supported maintaining and replacing infrastructure to avoid high repair costs. It noted that infrastructure replacements should be done according to a long-term plan to improve efficiency and sustainability.[64] Our assessment of Essential Water's long-term planning processes is in section 4.4.

Apart from Essential Water's submission, we received no feedback on capital expenditure in response to our Draft Report. Although, Essential Water did not request any financial changes in its submission, it noted that its cost estimates had increased since its proposal in June 2021.[65] And so, we expect Essential Water to balance its operating requirements and capital costs over the 2022 determination period with customer expectations and providing good value for money.

4.3.1 We have accepted some of AECOM's recommended adjustments to proposed capital expenditure

While AECOM found Essential Water's capital expenditure proposal to be mostly reasonable, it found one project (Mica Street concrete remediation) to be inefficient and also recommended timing adjustments to reflect delays from the 2019 determination period. Our decision is to accept AECOM's recommended timing adjustments, but not its recommendation on the Mica Street concrete remediation. Our reasoning for departing from AECOM's recommendation on this project is discussed in section 4.3.2.

Table 4.3 outlines:

- Essential Water's proposed capital expenditure allowance
- AECOM's recommended adjustments
- IPART's decision on efficient capital expenditure
- IPART's decision on efficient capital expenditure including a continuing efficiency adjustment to Essential Water's proposed capital expenditure. As discussed in Chapter 3, IPART applies a continuing efficiency adjustment to proposed costs to reflect ongoing productivity improvements that we expect water businesses to achieve.

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

	2022-23	2023-24	2024-25	2025-26	Total
Essential Water proposal					
2022 capital expenditure	22.3	22.4	16.7	6.9	68.2
AECOM recommendations					
Efficiency adjustments for Mica Street concrete remediation	-2.8		+0.1		-2.7
Adjustments for timing of Graziers' Pipeline project	+6.8	+3.4			10.2
IPART decision					
Capital expenditure *excluding* continuing efficiency adjustment	29.0	25.8	16.7	6.9	78.4
Capital expenditure *including* continuing efficiency adjustment	28.8	25.5	16.3	6.7	77.3

Source: IPART analysis.

Our decision is:

7. To set Essential Water's efficient capital expenditure for the 2022 determination period as shown in Table 4.4.

Table 4.4 IPART's decision on capital expenditure – 2022 determination ($ millions, $2021-22)

Asset type	2022-23	2023-24	20224-25	2025-26	Total
Water	10.4	6.4	3.9	3.6	24.4
Wastewater	12.7	14.1	9.4	1.4	37.6
Corporate overheads	3.7	3.5	2.2	0.8	10.2
Non-system (ICT)	1.4	1.0	0.4	0.4	3.1
Non-system (FFP & E)	0	0.0	0.0	0	0.1
Non-system (vehicles)	0.4	0.4	0.4	0.4	1.5
Non-system (buildings)	0.1	0.1	0.1	0.1	0.3
Total	**28.8**	**25.5**	**16.3**	**6.7**	**77.3**

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

4.3.2 We did not accept AECOM's recommendation on Mica Street concrete remediation

Essential Water proposed around $2.5 million in capital expenditure to address premature concrete corrosion at the Mica Street water treatment plant (see details in Box 4.1). This project was also proposed for our 2019 review, where our cost consultant at the time, Aither found that it was not efficient because concrete corrosion protection should have been installed at the time of construction. While Aither considered the project was necessary, it concluded that it was not reasonable to include this project in the capital expenditure allowance.[66] Since our last review, Essential Water has engaged in legal action against the contractor who built the plant.[67] However, it does not appear that the full cost of the concrete remediation works has been recovered from the contractor and so Essential Water has again proposed to recover these costs from customers.

AECOM reviewed this project and found that it was not efficient because it considered a whole of life cost/risk assessment may help to determine the optimum timing of this project and instead recommended an allowance for ongoing monitoring of around $0.3 million.[68] While we acknowledge AECOM's preference for ongoing monitoring, we consider there is evidence that the repairs are needed more urgently and that delays may lead to higher costs. Therefore, we have not accepted AECOM's recommendation to defer the project. We also recognise Essential Water's efforts in pursuing the original contractor and consider on balance there is not clear evidence that Essential Water acted inefficiently at the time of construction. Therefore, our decision is to include the costs of Mica Street concrete remediation in the capital expenditure allowance.

Box 4.1 Mica Street concrete remediation

In 2014-15, Essential Water engaged a consultant to assess the condition of the concrete infrastructure at the Mica Street water treatment plant. They found that the low pH conditions required for greater organics removal (enhanced coagulation), caused calcium to be leached from concrete, resulting in corrosion. To protect the tanks from further degradation and premature asset failure, a seal coating of the concrete surfaces was recommended.

Essential Water proposed to undertake the concrete remediation in IPART's 2019 review. IPART's cost consultant Aither concluded that the repair costs were prudent, but not efficient because corrosion protection should have been installed at the time of construction.

Since that time Essential Water has engaged in legal action and received a $500,000 settlement from the service provider for the concrete degradation. However, the basis for the settlement is unclear.

Essential Water again proposed the concrete remediation project for the 2022 review. AECOM reviewed this proposal and concluded that:

- There appears to be no urgency in the application of a coating system, and AECOM instead recommends on-going monitoring.
- Coating systems have a finite life themselves and introduce additional maintenance requirements (and associated costs). If the coating system is applied in the next period, it would likely need to be replaced during the design life of the asset.
- A whole of life cost/risk assessment should be carried out to determine the optimum timing of this maintenance solution in combination with an ongoing monitoring program to monitor deterioration rates to support the proposal. Alternatively, the work can be carried out in stages as on-going maintenance.

AECOM acknowledges that Essential Water has subsequently identified further issues with the concrete (such as cracks in the clarifier tank walls exhibiting staining from corroded steel reinforcement). However, AECOM considers that the cause of these cracks in unclear and it has not been confirmed that the steel reinforcement is corroding.

Source: AECOM, Expenditure review of Essential Water's services, March 2022, Essential Water, Essential Water Pricing Proposal, June 2021, Aither, Essential Water expenditure review, January 2019, IPART analysis.

4.3.4 We expect Essential Water to review options for its capital projects

In its submission to the Draft Report, Essential Water noted it is facing significant cost increases for capital projects. It indicated materials costs and electricity costs are higher than its estimates for 2021-22, which has presented challenges. It also found quotes from consultants which demonstrate further cost increases are likely.[69]

AECOM reviewed Essential Water's submission and found it prudent practice to examine opportunities to identify efficiencies and reduce project costs where possible. It did not recommend new adjustments for capital expenditure but commented on potential cost-saving options a business could explore during the early stages of an infrastructure project. These include:[70]

- value engineering to examine and challenge the preferred option to reduce costs in certain areas
- revisiting the business case to identify a different option to that originally selected
- exploring new options that were not previously looked at in the business case
- reviewing the delivery model, such as adopting a design-and-construct contract instead of detailed design and then construction
- deferring the project start.

When faced with significant cost increases, we would expect Essential Water to re-evaluate its options in relation to capital projects. Any decisions that could increase costs and impact prices should be made with a clear focus on customer value and proceed only when efficient. On this basis, we recommend Essential Water review its options for capital expenditure over the 2022 determination period and continue to keep in mind the value its projects, and the associated costs, bring to customers.

A key principle under our new regulatory framework is that expenditure plans should contain robust costs.[71] That is, businesses should be accurately forecasting their efficient revenue needs to ensure customers are getting value for money.

While this new regulatory framework is largely forward looking, we would maintain discretion to assess past capital expenditure that is significantly above the expenditure allowance.[72] Primarily, this is to safeguard against inefficient investments while promoting accountability for expenditure outcomes. Essential Water has the capacity to perform well under the new regulatory framework, and we encourage it to review the framework's cost principles and ensure its capital expenditure over the 2022 determination period is robust and provides clear value to its customers.

4.4 Essential Water's long-term planning processes are sound and consider the impacts of climate change

AECOM reviewed Essential Water's long-term asset management and planning processes and found that they reflect good practice, but also recommended some improvements to documentation processes including:

- improving definitions around how documents interact with each other to influence the asset management decisions
- improving clarity around governance and responsibility for asset management documentation
- Essential Water's asset management decision making is informed by multiple data sources/systems. Improvements could be achieved by documented or applied data management processes to reduce risks to data consistency, quality and accuracy.[73] AECOM found that Essential Water's planning processes consider the impacts of climate change through demand management strategies and supply augmentation projects.[74] We commend Essential Water on its efforts to plan for climate change impacts.

AECOM's report includes a detailed assessment of Essential Water's long-term asset management and planning processes.

4.5 We are expanding output measures to better reflect customer priorities

Essential Water has adopted service standards (output measures) to track and report on whether it is delivering on its regulatory requirements, as well as community and customer expectations. Essential Water proposed to maintain its existing set of output measures for the 2022 Determination. We asked AECOM to review:

- how Essential Water has performed against its current output measures over the last 3 years (shown in Table 4.5). AECOM found Essential Water has met its water quality targets, but not reported performance against 3 of its 7 output measures (response times, notice periods and duration of planned interruptions).[75]
- Essential Water's proposal to maintain its current output measures for the 2022 Determination. AECOM found there is scope for Essential Water to expand its output measures to align with current best practice by reporting on service quality and performance from its customers' perspective.[76]

We expect Essential Water to collect and report on performance information against all existing indicators and would like to see improvements in this area. Essential Water has indicated it plans to have systems in place that will enable reporting on all existing indicators for the next review.

In response to our Draft Report, Essential Water accepted our decision to expand its existing output measures and told us it looks forward to hearing customer feedback on the metrics they value.[77]

Our decision is to accept AECOM's recommendation to expand Essential Water's output measures to align with current best practice. To support this, we are recommending that Essential Water start to collect and report on information about duration of service interruptions (both planned and unplanned) and the number of customers affected. This will help Essential Water better understand the quality of services received by its customers.

Table 4.5 shows our decisions on output measures for the 2022 Determination.

Table 4.5 Essential Water's performance against output measures

Output measure	AECOM findings	IPART decisions
The availability (reliability) of water supply	Some aspects reported, no data provided for verification	Essential Water to collect information and report on **water supply interruptions** (frequency, duration and number of customers affected by planned and unplanned interruptions)
Water quality	All targets achieved (100%), comprehensive data provided for verification	Essential Water to collect information and report on **water quality events** (frequency and duration of all events out of specification, frequency and duration of selected specific events (such as colour) out of specification)
Response times	All targets achieved for 4 priority definitions (100%), no data provided for verification	This measure has been addressed under customer complaints
Wastewater performance	All targets achieved (100%), only EPA data provided for verification	Essential Water to collect information and report on **wastewater service interruptions** (frequency, duration and number of customers affected by planned and unplanned interruptions)
Customer complaints	All targets achieved (100%), verification data on complaints provided but not on response times	Essential Water to collect information and report on **customer complaints** (number by type (as reportable to BOM); response time)
Notice periods	Not reported, no data provided for verification	Essential Water to continue to collect information and report on notice periods.
Duration of planned interruptions	Not reported, no data provided for verification	This measure has been addressed under water supply interruptions and wastewater service interruptions
		Essential Water to collect information and report on **notifiable environmental impacts** (number by type (as reportable to BOM); response time).

Source: AECOM, Expenditure review of Essential Water's services, March 2022, p 79, IPART analysis.

Our decision is:

8. To expand Essential Water's existing output measures to align with current best practice as shown in Table 4.5.

Chapter 5

Other costs and revenue requirement

05

Summary of our decisions for other costs and revenue requirement

Essential Water's notional revenue requirement is $179.9 million

This amount is $27.4 million (13.2%) less than what Essential Water proposed.

The difference largely reflects our reduction in Essential Water's operating expenditure to an efficient level (see Chapter 3) and using a lower cost of capital than proposed.

Essential Water's return of assets (regulatory depreciation) is $16.7 million

We calculated this allowance using a straight-line depreciation method and by determining the appropriate asset lives for the assets in Essential Water's RAB.

Essential Water's return on assets is $22.1 million

The opening RAB for the 2022 determination period is $160.8 million and we added $77.3 million of forecast capital expenditure for the period.

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

Essential Water's working capital allowance is $0.8 million

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

Essential Water's tax allowance is $0.5 million

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

We have included a cost of debt true up of -$1.3 million

The actual annual changes in the cost of debt over the 2019 determination period were lower relative to the cost of debt allowed for in the WACC.

We included a Demand Volatility Adjustment of $0.6 million

Overall, Essential Water sold less water than forecast over the 2019 determination period.

We included an adjustment of $0.6 million to compensate for the delay in the start of the new prices

The date from which the new prices would apply was delayed by 6 months to 1 January 2023. This adjustment means that neither Essential Water nor customers are worse off as a result of the delay.

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

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

5.1 Essential Water's total notional revenue requirement is $180 million

Our decision is:

9. To set the notional revenue requirement at $179.9 million over the 2022 determination period as shown in Table 5.1.

Our decision to set total NRR over the 2022 determination period at $179.9 million, which is $27.4 million (13.2%) lower than Essential Water's proposed revenue requirement of $207.3 million. Table 5.1 compares our decision on NRR with Essential Water's proposal.

In its submission to our Draft Report, Essential Water accepted our decision to set the NRR at $176.2 million over the 2022 determination period, subject to any changes in expenditure.[78] For the Final Report, we have applied a lower WACC however, this has been offset by higher operating expenditure for Essential Water and higher WaterNSW Pipeline costs (see Chapter 3). Therefore, Essential Water's NRR has increased from $176.2 million to $179.9 million for the Final Report.

Table 5.1 Decision on total notional revenue requirement ($ millions, $2021–22)

Building block	2019[a]	2022-23	2023-24	2024-25	2025-26	Total
Essential Water proposal						
Total notional revenue requirement		52.1	51.0	51.7	52.4	207.3
IPART decision						
Operating expenditure (excluding bulk water purchases)	13.2	14.8	13.8	13.6	12.4	54.6
Bulk water purchases	26.3	23.5	20.8	20.5	20.5	85.3
Regulatory depreciation	3.2	3.7	4.1	4.4	4.6	16.7
Return on assets	6.9	4.8	5.4	5.8	6.0	22.1
Working capital allowance	0.2	0.1	0.2	0.2	0.2	0.8
Tax allowance	0.3	0.1	0.1	0.2	0.2	0.5
Cost of debt true up		-1.3	0.0	0.0	0.0	-1.3
DVAM true up		0.6	0.0	0.0	0.0	0.6
Inflation adjustment for 1 January 2023 start date		0.6	0.0	0.0	0.0	0.6
Total notional revenue requirement	**50.2**	**46.9**	**44.5**	**44.6**	**43.9**	**179.9**
Difference proposal & IPART decision		-5.2	-6.5	-7.1	-8.5	-27.4
Difference proposal & IPART decision (%)		-10.0%	-12.8%	-13.8%	-16.3%	-13.2%

a. The figures presented in the column headed 2019, are the average allowance over the 2019 determination, adjusted for inflation.

Source: IPART analysis.

5.2 We used the building block approach to calculate the NRR

We used the 'building block' approach to calculate Essential Water's NRR as outlined in Chapter 2. This approach involves determining an allowance for each year of the determination for each of the following 5 components (or building blocks):

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

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

We make 2 adjustments for the previous determination period; one for the difference in the cost of debt and the other for demand volatility (discussed in sections 5.6 and 5.9). Once we have calculated the NRR, we account for any revenue that Essential Water will receive from other sources.

5.3 We determine the regulatory asset base using our usual methodology

Our decisions are:

10. We calculate the regulatory asset base for 2018-19 to 2025-26 by using:
    - a 2019-2020 opening regulatory asset base of $123.8 million. The regulatory asset base for each year is shown in Table 5.3
    - $35.7 million (nominal) of prudent and efficient historical capital expenditure added to the RAB over the 2019 determination period (Chapter 4)
    - $77.3 million of prudent and efficient forecast capital expenditure added to the RAB over the 2022 determination period (Chapter 4)
    - Essential Water's reported historical and forecast cash capital contributions as shown in Table 5.2
    - Essential Water's reported historical and forecast asset disposals of zero.

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

In its submission to our Draft Report, Essential Water accepted our approach on calculating the regulatory asset base over the 2022 determination period, subject to any changes in expenditure.[79]

5.3.1 We deducted $4.9 million in cash capital contributions and deducted no asset disposals

Cash capital contributions are external funding that Essential Water receives towards its capital expenditure, such as government grants. Cash capital contributions are netted off capital expenditure so that they do not enter the RAB. This ensures that customers do not pay a return on assets or regulatory depreciation for capital expenditure that has already been funded from other sources.

However, businesses would normally need to pay tax on capital contributions. Therefore, we deduct the cash contributions net of tax from the capital expenditure allowance, effectively capitalising the tax impact on capital contributions into the RAB.

Essential Water's proposal included $7.1 million of capital cash contributions from 2021-22 to 2024-25 for the Wills Street WWTP upgrade. This project has a total cost of $28.5 million (excluding divisional overheads) and has approval for 25% funding from NSW DPE's Safe and Secure Water Program. Allowing for tax, this amount is $4.9 million over the 2 determination periods and is shown in Table 5.2.

Table 5.2 Decision on cash capital contributions ($ millions, $2021–22)

	2021-22	2022-23	2023-24	2024-25	2025-26
Cash capital contribution (total)	0.3	0.3	5.0	1.4	0.0
Cash capital contribution (net of tax)	0.2	0.2	3.5	1.0	0.0

Source: IPART analysis.

Asset disposals can include asset sales, write-offs and write-downs. Essential Water has proposed zero asset disposals and therefore we have not made a deduction from the RAB for asset disposals.

5.3.2 The opening regulatory asset base for the 2022 determination period is $160.8 million

We calculated the opening RAB for the 2022 determination period by rolling the RAB forward from the previous determination period. To roll the RAB forward, we started with an opening RAB on 1 July 2018 of $114.1 million (as set in the 2019 price review) and made the following adjustments:

- adding $10.3 million ($2018-19) of prudent and efficient capital expenditure for 2018-19 (as this was a forecast capital expenditure for that year in the 2019 determination period)
- adding $35.7 million (nominal) of prudent and efficient historical capital expenditure for the 2019 determination period (Chapter 4)[a]
- deducting $0.2 million of cash capital contributions (net of tax) (section 5.3.1)
- deducting zero for the regulatory value of asset disposals (section 5.3.1)
- deducting $12.1 million for regulatory depreciation (as allowed in the 2019 price review)
- adding $13.0 million of annual indexation of the RAB.

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

Table 5.3 RAB calculation for the 2019 determination period ($ millions, $nominal)

RAB	2018-19	2019-20	2020-21	2021-22
Opening RAB	114.1	123.8	131.1	142.8
Plus: Efficient capital expenditure	10.3	10.5	9.7	15.4
Less: Cash capital contributions (net of tax)	0.0	0.0	0.0	0.2
Less: Asset disposals	0.0	0.0	0.0	0.0
Less: Regulatory depreciation	2.5	2.8	3.2	3.6
Plus: Indexation	1.9	-0.4	5.2	6.3
Closing RAB	123.8	131.1	142.8	160.8

Source: IPART analysis.

[a] Total capital expenditure shown in Chapter 4 is slightly higher ($36.9 million) because the amounts in that chapter are presented in $2021-22, rather than in nominal terms.

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

- adding $77.3 million of prudent and efficient forecast capital expenditure (Chapter 4)
- deducting $4.7 million of cash capital contributions (net of tax) (section 5.3.1)
- deducting zero for the regulatory value of forecast asset disposals (section 5.3.1)
- deducting $17.0 million for regulatory depreciation (section 5.4).

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

Table 5.4 RAB calculation for the 2022 determination period ($ millions, $2021–22)

RAB	2022-23	2023-24	2024-25	2025-26
Opening RAB	160.8	185.6	203.4	214.3
Plus: Efficient capital expenditure	28.8	25.5	16.3	6.7
Less: Cash capital contributions (net of tax)	0.2	3.5	1.0	0.0
Less: Asset disposals	0.0	0.0	0.0	0.0
Less: Regulatory depreciation	3.8	4.2	4.4	4.6
Closing RAB	185.6	203.4	214.3	216.3

Source: IPART analysis.

5.4 Essential Water's regulatory depreciation is $17 million

Our decisions are:

11. To calculate the allowance for return of assets (regulatory depreciation), using:
    - a straight-line depreciation method
    - for existing assets, the rolled forward asset lives from the 2019 determination period as listed in Table 5.5
    - for new assets, the asset lives listed in Table 5.5.

12. To set the allowance for return of assets at $16.7 million over the 2022 determination period as shown in Table 5.6.

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

In its submission to our Draft Report, Essential Water accepted our decision to set the allowance for return of assets at $16.6 million over the 2022 determination period, subject to any updates to expenditure.[80]

5.4.1 We used straight-line depreciation to calculate regulatory depreciation

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

In its submission to our Draft Report, Essential Water accepted our decision to calculate the return of assets using a straight line depreciation method.[81]

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

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

The asset lives we calculated are different to those proposed by Essential Water due to adjustments to starting asset lives and historical capital expenditure. Table 5.5 lists the asset lives for existing assets.

5.4.3 We accepted the proposed asset lives for new assets except for ICT assets

We reviewed the proposed asset lives for new assets and found that they were consistent with the 2019 determination and remain appropriate for the 2022 determination period, with one exception - ICT assets. We asked AECOM for advice on Essential Water's proposed asset lives. AECOM agreed that 5 years may be reasonable for small hardware such as computers. However, the ICT assets in question include larger, longer-lived assets (such as enterprise software systems). In addition, a 10-year asset life is consistent with our decision in the previous determination. We agree with AECOM's advice on ICT assets and have adopted the asset lives for new assets shown in Table 5.5.

Table 5.5 Decision on asset lives for the 2022 determination period (years)

	Remaining lives of existing asset		Expected lives of new assets	
	Proposal	IPART decision	Proposal	IPART decision
Water	61.8	53.1	98	98
Wastewater	51.1	49.6	89	89
ICT	8.8	8.7	5	10
Furniture, Fittings, Plant and Equipment	5.0	5.2	7	7
Vehicles	13.5	13.5	15	15
Buildings	48.2	48.1	50	50

Note: For existing assets, the figures above are rolled forward asset lives from the 2019 determination period.
Source: IPART analysis.

5.4.4 Essential Water's proposal and IPART's decision for regulatory depreciation are similar

Despite the different asset lives used, our return of assets allowance is similar to what was proposed. This is because our decision on the opening RAB is lower than that proposed by Essential Water, which offsets the lower asset lives for existing assets used in the report.

Table 5.6 Decision on regulatory depreciation ($ millions, $2021–22)

	2022-23	2023-24	2024-25	2025-26	Total
Essential Water proposal	3.5	4.0	4.3	4.5	16.4
IPART decision	3.7	4.1	4.4	4.6	16.7
Difference	0.2	0.1	0.1	0.0	0.4
Difference %	5%	3%	1%	0%	2%

Note: The allowance for return of assets is a mid-year figure (i.e. the RAB roll forward depreciation figure is discounted by half a year of WACC). It will therefore not match the end of year figures in Table 5.4

Source: IPART analysis and Essential Water, Essential Water Pricing Proposal, June 2021, p 79.

5.5 Essential Water's return on assets is $22 million

Our decision is:

13. To set an allowance for return on assets of $22.1 million over the 2022 determination period (shown in Table 5.7). This is calculated by using:
    - the RAB values shown in Table 5.4
    - a real post-tax weighted average cost of capital of 2.8%
    - a sampling date of 31 March 2022 for market observations as outlined in Appendix D.

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

In its submission to our Draft Report, Essential Water accepted our draft decision to set the allowance for return on assets at $22.7 million over the 2022 determination period for the Draft Report.[82]

5.5.1 Our approach to forecasting inflation expectations remains unchanged

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

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

In its proposal, Essential Water disagreed with our approach. It suggested using a glide path approach to estimating inflation expectations.[83] This was due to:

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

We decided to maintain our current approach to estimating inflation expectations. We would need strong and compelling evidence to change how we estimate a single WACC parameter in isolation, because the financial market data underlying many elements of the WACC are interrelated. We consider it is more appropriate to consider the WACC methodology in a holistic and internally consistent way as part of our periodic WACC reviews. We intend to commence a review of our WACC methodology in 2022.

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

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

We used our standard methodology to calculate the WACC. Under our approach we estimate one WACC based on market data that is current at the time we set the WACC and one based on long-term average data. When our uncertainty index, which indicates the level of volatility in capital markets, is within one standard deviation of its mean value, we select the mid-point of the current and long-term WACC values. The uncertainty index was within this range at the time we set the WACC. The average of the 2 WACC values is 2.8%. Appendix D shows the parameters we used to calculate the WACC. Essential Water proposed a placeholder WACC of 3.7%, based on IPART's February 2021 Bi-annual WACC update[84]

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

5.5.3 The decision on return on capital allowance is 24% lower than proposed

Table 5.7 shows the resulting return on assets (i.e. RAB x WACC%), based on the RAB values set out in section 5.3, and our decisions to apply a real post-tax WACC of 2.8%. The Draft Report return on capital allowance is 24% lower than that proposed by Essential Water mostly because of the lower WACC value applied.

Table 5.7 Decision on return on assets ($ millions, $2021–22)

	2022-23	2023-24	2024-25	2025-26	Total
Essential Water proposal	6.5	7.1	7.6	7.8	29.1
IPART decision	4.8	5.4	5.8	6.0	22.1
Difference	-1.7	-1.7	-1.8	-1.8	-6.9
Difference %	-26%	-24%	-23%	-23%	-24%

Source: IPART analysis and Essential Water, Essential Water Pricing Proposal, June 2021, p 75.

5.6 We included a cost of debt true-up in the NRR of -$1.3 million for the 2019 determination period

Our decisions are:

14. To set a true-up for differences between the forecast and actual cost of debt over the 2019 determination period of -$1.3 million.

15. To use a true-up for differences between the forecast and actual cost of debt over the 2022 determination period in the next Determination.

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

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

- update prices annually to reflect the updates in the WACC annually, or
- use a regulatory true-up at the next period, which we would pass through to prices at the beginning of the next period.[85]

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

The previous Essential Water price review allowed for an end of period true-up to account for cumulative annual changes in the cost of debt over the 2019 determination period.[86] Overall, the annual updates resulted in a lower cost of debt relative to the cost of debt allowed for in the WACC. Essential Water proposed a negative adjustment of $1.4 million.[87] We reviewed the calculation and decided to include a negative adjustment of $1.3 million.

In its submission to our Draft Report, Essential Water accepted our decision to set a true-up for differences between the forecast and actual cost of debt over the 2019 determination period.[88]

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

In its proposal, Essential Water proposed an end of period cost of debt true-up for the 2022 determination period.[89] We agree with Essential Water and decided to undertake the regulatory true-up at the next price review as we have done for the 2019 determination period. This approach provides greater certainty to water users about their prices over the determination period – that is, changes in prices would be impacted by inflation only, rather than also being impacted by annual changes in the cost of debt.

In its submission to our Draft Report, Essential Water accepted our decision to use a true-up for differences between the forecast and actual cost of debt over the 2022 determination period.[90]

5.7 Essential Water's working capital allowance is almost $1 million

Our decision is:

16. To set the working capital allowance for the 2022 determination period as shown in Table 5.8.

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

In 2018, we developed a standard approach to calculate the working capital allowance, which can be found on our website.[91] We applied the standard approach to this review.

The $755,000 we allowed for the 2022 determination period represents the holding cost of net current assets (Table 5.8). The allowance is lower than that proposed by Essential Water because both the WACC and net working capital we used are lower.[b]

In its submission to our Draft Report, Essential Water accepted our decision to set the working capital allowance at $755,000 over the 2022 determination period.[92]

Table 5.8 Decision on the working capital allowance ($'000s, $2021–22)

	2022-23	2023-24	2024-25	2025-26	Total
Essential Water proposal	216	229	249	296	991
IPART decision	148	168	201	238	755
Difference	-68	-62	-48	-58	-236
Difference %	-31%	-27%	-19%	-20%	-24%

Source: IPART analysis.

[b] Essential Water's proposed working capital allowance is higher than ours is because Essential Water used a higher WACC (5.7%) than us (5.4%) and because our receivables are lower due to a lower overall revenue requirement. We use a nominal post-tax WACC to calculate the return on working capital.

5.8 Essential Water's tax allowance is around $500,000

Our decisions are:

17. To set the tax allowance as shown in Table 5.9, using:
    - a tax rate of 30%
    - IPART's standard methodology.

We included an explicit allowance for tax because we use a post-tax WACC to estimate the allowance for a return on assets in the revenue requirement (Table 5.7). This tax allowance reflects the regulated business's forecast tax liabilities.

Table 5.9 Decision on the tax allowance for the 2022 determination period ($ '000s, $2021-22)

	2022–23	2023–24	2024–25	2025–26	Total
Essential Water proposal	800	509	618	643	2,571
IPART decision	93	92	154	165	505
Difference	-706	-417	-464	-478	-2,066
Difference %	-88%	-82%	-75%	-74%	-80%

Source: IPART analysis.

We calculated the tax allowance for each year by applying a 30% statutory corporate tax rate adjusted for franking credits to the business's (nominal) taxable income.[c] We applied our standard methodology to set the tax allowance. Our tax allowance is lower than proposed predominantly because of the lower WACC used in the report.

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

In its submission to our Draft Report, Essential Water accepted our decision to set the tax allowance using a tax rate of 30% over the 2022 determination period.[93]

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

5.9 We added $0.6 million to the NRR under the demand volatility adjustment mechanism

Our decisions are:

18. To include $0.6 million in the NRR to account for differences between the forecast and actual water sales over the 2019 determination period.

Section 6.5 outlines the risks involved in setting prices based on forecast water sales, as actual sales may vary and are difficult to predict accurately. To address this risk, at the 2019 review, we indicated we would include a demand volatility adjustment mechanism (DVAM) to adjust Essential Water's revenue in the subsequent determination period if actual water sales were 5% higher or lower than forecast (i.e. a demand volatility adjustment with a ±5% materiality threshold).

Our decision is to adjust the NRR by $0.6 million to account for lower than forecast water sales over the 2019 determination period. This is lower than the proposed adjustment of $2.5 million because of 2 differences. We decided to calculate the DVAM:

- including a deduction for avoided costs, such as transportation and treatment costs, that were not incurred as a result of lower water sales. This reduces the adjustment by about 60%; and
- based on actual water sales. This means we did not include the last year of the 2019 determination period (i.e. 2021-22) as it is currently a forecast. That is, we included an adjustment for the first 2 years (2019-20 and 2020-21) only.

In its submission to our Draft Report, Essential Water accepted our decision to include $0.6 million in the NRR under the demand volatility adjustment mechanism over the 2019 determination period.[94]

For the forward looking DVAM for the 2022 determination period, we would continue to calculate the DVAM on a one year lagged basis. This is explained in further detail in section 6.5.

5.10 We included an adjustment of $0.6 million to compensate for the delay in the start of the new prices

As previously announced on our website, we have delayed the commencement of new prices under the 2022 Determination is delayed until 1 January 2023.[d] We have set prices for the 2022 Determination (factoring in final WACC and other costs) as though these prices commenced on 1 July 2022. However, in the period between 1 July 2022 and 1 January 2023, Essential Water was not able to charge these new prices. We have included an adjustment of $0.6 million, which is the amount of additional revenue that Essential Water would have received had it been able to charge the new prices. This is so that neither Essential Water nor its customers are better or worse off as a result of the delay.

5.11 We smoothed the revenue requirement before setting prices

We then set a target revenue for each year for each service; that is, the actual revenue we expect Essential Water to generate from prices for that year for both water and wastewater. To set target revenue we subtracted our recommended government subsidies from the NRR then smoothed the remaining revenue requirement across the determination period to keep most prices constant in real terms over the 4 years. In making these decisions on target revenue, we considered a range of factors including implications for price levels, the rate they would change, and any impacts on Essential Water and its customers.

Recommendations

2. That the NSW Government fund the difference ($85.5 million) between the total revenue to be recovered from customers and the target revenue via a direct contribution to Essential Water. This funding contribution would reflect:
   - the shortfall in revenue associated with transitioning the chlorinated water usage price to $1.65 per kL by 2025-26 – this is $16,300 over the 2022 determination period
   - revenue associated with transitioning usage price for untreated water (EW Pipeline customers) to $1.40 per kL by 2025-26 – this is $106,000 over the 2022 determination period
   - the shortfall in revenue associated with transitioning trade waste prices towards cost-reflective levels – this is $600,000 over the 2022 determination period
   - the shortfall in WaterNSW Pipeline costs such that all other prices stay constant in real terms over the determination period - this is $84.8 million over the 2022 determination period.

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

Our recommended WaterNSW Pipeline subsidy ($84.8 million) is slightly lower than the cost to Essential Water of WaterNSW Pipeline services ($85.3 million) to prevent over-recovery with constant (real) prices (see Table 5.10 and Table 5.11). We discuss the subsidies in Chapters 1, 7, 8 and 9.

To set prices for each service, we calculate a separate NRR and target revenue for water and wastewater services. Each NRR is based on the cost build-up for the individual service, with an allocation of corporate costs.

The target revenue for both water and wastewater has been kept constant over the 4 years of the 2022 determination period. This means that we can keep most prices constant for this price review (not including inflation). At the 2019 price review, we decided not to remove the cross-subsidy between water and wastewater, noting that there was significant capital expenditure expected for wastewater for the next price review and that this would increase the NRR for wastewater. The last row in Table 5.10 and Table 5.11 shows that the cross-subsidy between water and wastewater is reducing over time.

Table 5.10 Decision on notional revenue requirement for water ($ millions, $2021-22)

Water	2019[a]	2022-23	2023-24	2024-25	2025-26	Total
Essential Water proposal						
Total notional revenue requirement		46.6	44.2	44.3	44.6	179.8
IPART decision						
Operating expenditure (excluding Pipeline costs)	10.4	12.3	11.4	11.1	10.2	44.8
Bulk water purchases (i.e. Pipeline costs)	26.3	23.5	20.8	20.5	20.5	85.3
Regulatory depreciation	2.2	2.5	2.7	2.8	2.9	10.8
Return on assets	4.8	3.2	3.4	3.6	3.6	13.8
Working capital allowance	0.2	0.2	0.2	0.2	0.2	0.7
Tax allowance	0.2	0.0	0.1	0.1	0.2	0.4
Cost of debt true up		-0.9	0.0	0.0	0.0	-0.9
DVAM true up		0.6	0.0	0.0	0.0	0.6
Inflation adjustment for 1 January 2023 start date		0.4	0.0	0.0	0.0	0.4
NRR for water	44.0	**41.8**	**38.5**	**38.2**	**37.5**	**156.0**
Target revenue		16.6	16.5	16.5	16.5	66.1
Government subsidy for chlorinated water		0.01	0.01	0.00	0.00	0.02
Government subsidy for untreated water		0.04	0.03	0.02	0.02	0.11
Government WaterNSW Pipeline subsidy		23.5	20.8	20.5	20.5	85.3
Difference between NRR and target revenue (including government subsidies)		-1.6	-1.1	-1.2	-0.5	-4.4

a. The figures presented in the column headed 2019, are the average allowance over the 2019 determination, adjusted for inflation.

Source: IPART analysis.

Table 5.11 Decision on notional revenue requirement for wastewater ($ millions, $2021–22)

Wastewater	2019[a]	2022-23	2023-24	2024-25	2025-26	Total
Essential Water proposal						
Total notional revenue requirement		5.5	6.8	7.4	7.8	27.5
IPART decision						
Operating expenditure	2.4	2.5	2.5	2.5	2.3	9.8
Regulatory depreciation	0.9	1.2	1.4	1.6	1.7	6.0
Return on assets	1.8	1.6	2.0	2.3	2.4	8.3
Working capital allowance	0.0	0.0	0.0	0.0	0.1	0.1
Tax allowance	0.2	0.0	0.0	0.0	0.0	0.1
Cost of debt true up		-0.4	0.0	0.0	0.0	-0.4
Inflation adjustment for 1 January 2023 start date		0.2	0.0	0.0	0.0	0.2
NRR for wastewater	**5.3**	**5.2**	**5.9**	**6.4**	**6.4**	**23.9**
Target revenue		7.0	7.0	7.1	7.1	28.2
Government subsidy for trade waste		0.2	0.2	0.1	0.1	0.6
Difference between NRR and target (including government subsidies)		2.0	1.3	0.8	0.8	4.9

a. The figures presented in the column headed 2019, are the average allowance over the 2019 determination, adjusted for inflation.

Source: IPART analysis.

Chapter 6

Forecast water sales and customer numbers

06

Summary of our decisions for forecast water sales and customer numbers

We set forecast customer numbers, water sales volumes and wastewater discharge volumes based on Essential Water's proposal

Our decision is to accept Essential Water's proposal. The proposal is broadly in line with actuals and relatively stable over the next 4 years. This means:

- forecast customer numbers are around 10,000 to 11,000 per year for water and wastewater services in Broken Hill
- forecast water sales volumes are around 5,000 ML per year
- forecast wastewater discharge volumes are around 559 ML per year.

Essential Water will continue to have a demand volatility adjustment mechanism

Our decision is to consider applying a demand volatility adjustment at the next determination period. This is to manage the risk that actual customer numbers and water sales over the 2022 determination period are materially higher or lower than the forecasts we used in setting prices.

Understanding past and future demand for water and wastewater services in Broken Hill and surrounding communities is important for setting prices. We set prices using forecasts of:

- the number of residential and non-residential customers we expect would receive water and wastewater services in each of the 4 years of the 2022 determination period (forecast customer numbers)
- the volume of water we expect Essential Water would provide to residential and non-residential customers in each of those years (forecast water sales volumes)
- the volume of wastewater we expect residential and non-residential customers would discharge in each of those years (discharge allowances and discharge factors).

It is important that these forecasts are reasonable. If Essential Water's actual customers numbers, water sales and wastewater discharge volumes differ markedly from the forecasts over the 2022 determination period, the determined prices could result in Essential Water significantly over or under-recovering its required revenue.

Because forecasting is not an exact science, we also considered how to manage the risk that actual water sales and customer numbers over the determination period may be materially higher or lower than the forecasts we used to set prices. Therefore, we decided to have a demand volatility adjustment mechanism (DVAM) to help protect both customers and Essential Water.

In response to our draft decisions on demand, we received submissions from Essential Water and Foundation Broken Hill. A further 4 stakeholders noted potential reductions in water use over the determination period.

Essential Water supported our draft decisions on demand and did not comment further.[95] Foundation Broken Hill reiterated its submission to the Issues Paper and encouraged future forecasts to include the growth impacts of mining activity.[96] The remaining stakeholders noted that an increase to water prices could result in people reducing their water use.[97] Broken Hill City Council noted that an increase for inflation above 3.5% could be enough to make residents reduce their water use.[98]

Consistent with our draft decision, we have decided to accept Essential Water's proposed forecasts for water sales and customer numbers for the 2022 determination period.

Currently, there is not a clear case for reconsidering the forecasts we used to set prices. We are generally keeping prices stable, which assists with affordability and encourages stable water use. Further, we have not seen data showing a reduction in water use in response to inflation and price increases.

However, we understand that new and better data may emerge in the future to help us better understand the relationship between water usage, affordability, health and environmental factors. Therefore, we encourage Essential Water to engage with customers, the community and different agencies to holistically consider this matter in the lead up to the next price review.

This chapter discusses our decisions on Essential Water's forecast customer numbers, water sales volume and discharge volumes over the 2022 determination period. It also sets out our decision to have a DVAM at the next determination. The consultants' reports and stakeholders' submissions for this chapter can be found on our website. We discuss in more detail the issues around accessing and using affordable, safe and reliable water in section 7.4.

6.1 We accepted Essential Water's forecast customer numbers

Essential Water proposed a small change in customer numbers going forward:[99]

- A small increase in **residential** customer numbers for water and wastewater services. This is to reflect historical demographic trends and the NSW Department of Planning and Environment's (DPE) projections for occupied dwellings in the region.
- Adopt a constant profile for **non-residential** customers for water and wastewater services based on its estimate for 2020-21.

Our demand consultant, The CIE, assessed this proposal and made small changes to the proposed forecasts for the 2022 determination period. These changes resulted in a slightly higher forecast than proposed by Essential Water:[100]

- The CIE recommended setting forecasts using the latest data from the Australian Bureau of Statistics and development approval numbers.
- The CIE recommended using the most up-to-date actuals to forecast non-residential customer numbers.

Essential Water and Foundation Broken Hill responded to our draft decisions on forecast customer numbers. Essential Water supported our decisions without comment,[101] and Foundation Broken Hill encouraged future forecasts to consider the growth impacts of future mining activity.[102]

Our decision is to set customer number forecasts based on Essential Water's proposal. While the CIE's recommendations may result in a more precise set of forecasts, we consider the difference between the CIE's recommendations and Essential Water's proposal is not material enough to justify moving away from the proposal.

Table 6.1 Decision on forecast water and wastewater customer numbers

	2022-23	2023-24	2024-25	2025-26
Water				
Residential	9,955	9,961	9,966	9,972
Non-residential	900	900	900	900
Wastewater				
Residential	9,376	9,378	9,380	9,382
Non-residential	677	677	677	677

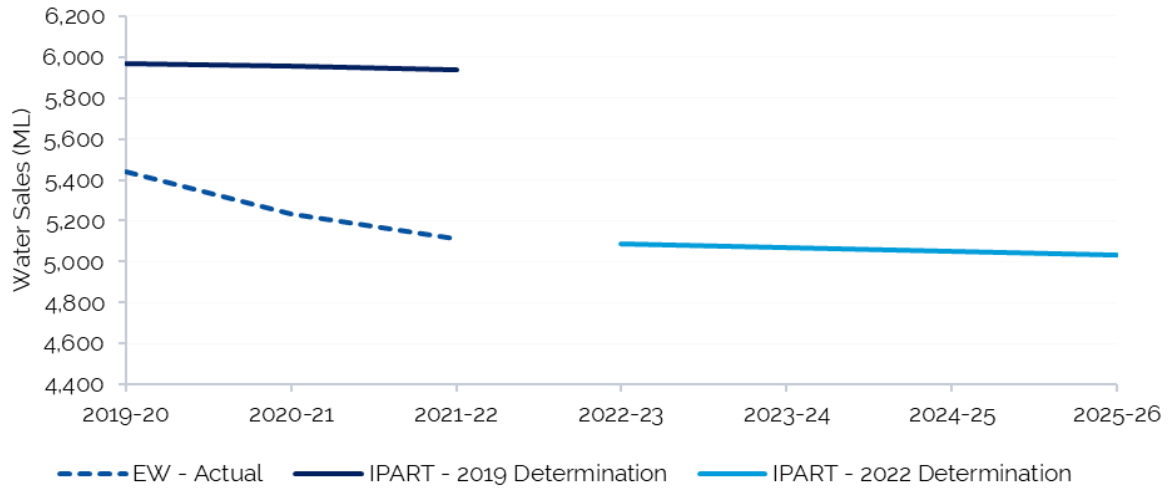
Note: The table shows the average number of customers for the year, rather than as at year end. Non-residential customers include the mines and refers to the number of metered connections.

Source: IPART analysis

6.2 We accepted Essential Water's water sales volumes

In 2019, we set the water sales forecast at around 6,000 ML per year, which was significantly higher than historical water sales volumes. We decided to include a 'bounce back' in the water sales forecasts because of the behavioural impact of having a more secure water source (i.e. the WaterNSW Pipeline) on the amount of water used by customers. However, Essential Water showed there was no bounce in water sales and that actuals were consistently below the forecasts used in 2019 (see Figure 6.1).

Figure 6.1 Historical and forecast water sales volumes



Source: Essential Water, Essential Water Pricing Proposal, June 2021, p 70, Essential Water's AIRSIR submission and IPART analysis.

For the next 4 years, Essential Water proposed to set water sales forecasts at around 5,000 ML per year.[103] Essential Water proposed not to include a bounce back in water sales forecasts, given this has not been realised in recent years. Further, it is expecting water sales to gradually decline. Essential Water's proposal is based on its latest water modelling that considered a range of factors such as demographic trends, climate and water restrictions. Essential Water did not include the impact of a potential new mine on water sales because of the uncertainty of when this mine would be operational.

The CIE assessed Essential Water's proposal and recommended a small step increase. The CIE used a different forecasting approach that considered the impact of rainfall, temperature and water restrictions. Nonetheless, its forecasts showed an overall decline which is similar to Essential Water's proposal. Further, while the CIE's recommendations may result in a more precise set of forecasts, we consider the difference between the CIE's recommendations and Essential Water's proposal is not material enough to justify moving away from the proposal.

The community had mixed views on water use and forecasts. For example:

- Broken Hill City Council, Roy Butler MP and Outback Astronomy said the community would use less water in response to price increases.[104] In particular, Broken Hill City Council noted increases for inflation above 3.5% could decrease water use.[105]
- PIAC said Essential Water should not rely on usage forecasts for price setting. It recommended Essential Water adopt long-term targets for demand similar to the Lower Hunter Water Security Plan and use price signals to encourage efficient water use.[106]
- Foundation Broken Hill recommended we forecast growth in the region rather than decline.[107] Along with Regional Development Australia Far West, it indicated water use would increase because of new mining activity expected to start in the next few years.[108]

We have decided to maintain our draft decision and adopt Essential Water's water sales forecasts. After considering Essential Water's proposal, The CIE's recommendations, community submissions and feedback from the public hearing, we consider Essential Water's water sales forecasts to be reasonable for the 2022 review period. We recognise customers are concerned about affordability and the impacts of inflation on water use, and we discuss this further in Chapter 10. While we have not seen data that shows inflation impacting water sales volumes, we will continue to monitor the issue for our next review. Further, we expect Essential Water to engage with its customers for the next review on its forecasts.

Table 6.2 Decision on forecast water sales volumes (ML)

	2022-23	2023-24	2024-25	2025-26
Treated water	4,040	4,020	4,000	3,981
Chlorinated water	43	43	43	43
Untreated water	1,006	1,006	1,006	1,006
Total	**5,089**	**5,069**	**5,050**	**5,030**

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

Our decision is

19. To accept Essential Water's proposed customer numbers and total water sales volumes over the 2022 determination period, as show in Table 6.1 and in Table 6.2, respectively.

6.3 We accepted Essential Water's wastewater volumes

Our decision on wastewater volumes only relate to non-residential customers. This is because residential customers do not face an explicit wastewater usage price. Rather, we used a discharge allowance of 100 kL per year for residential customers to set prices (see Chapter 8).

Our decision is

20. To accept Essential Water's proposed wastewater volumes for non-residential customers as shown in Table 6.3.

For non-residential customers, Essential Water proposed wastewater volumes of 559 ML per year over the 2022 determination period. This is based on its estimate of actual wastewater volume for 2020-21.

The CIE assessed this proposal and found the approach reasonable. However, the CIE recommended to use the latest information it received from Essential Water for 2020-21. This resulted in wastewater volumes of 552 ML per year.

Our decision is to adopt Essential Water's wastewater sales forecasts (see Table 6.3). We considered Essential Water's proposal and our consultant's recommendation but did not receive any submissions on wastewater volumes. We consider the difference between the CIE's recommendations and Essential Water's proposal is not material enough to justify moving away from the proposal.

Table 6.3 Decision on forecast wastewater (ML)

	2022-23	2023-24	2024-25	2025-26
Non-residential	559	559	559	559

Source: IPART analysis.

6.4 Essential Water will continue to use the WaterNSW Pipeline to transport the majority of its water needs

In our 2019 review, we considered Essential Water could source water to meet some of the water demand from the Broken Hill community using its own water supply infrastructure.[109] Therefore, we assumed the WaterNSW Pipeline would be used to meet about 70% of water demand in Broken Hill.

Over the last 3 years, Essential Water reported it relied on the WaterNSW Pipeline to transport water to meet the community's water needs rather than using its own supply infrastructure. For the 2022 determination period, Essential Water proposed to continue to use the WaterNSW Pipeline to transport water and meet the majority of its water sales volumes outlined in Table 6.2

Our demand consultants assessed this proposal and found this efficient noting that:

- it was able to verify the historical preference for Essential Water to source its bulk water needs by transporting water from the Murray River via the WaterNSW Pipeline since 2019
- it was able to verify with Essential Water using the WaterNSW Pipeline to transport water and meet the water demand in the Broken Hill region for the 2022 determination period.[110]

After considering the proposal and our consultants' recommendations, our decision is to accept the proposal that Essential Water continue to use the WaterNSW Pipeline to meet the majority of water needs in Broken Hill.

Table 6.4 shows the volume of water Essential Water would need to transport using the WaterNSW Pipeline each year. The difference between this table and Table 6.2 is the estimated water losses that Essential Water proposed within its existing network.

In any water supply system, there are system losses as a result of leaking pipes, main breaks, system flushing, etc. Essential Water treats these water losses as non-revenue water for billing purposes. However, Essential Water will need to transport more water to cover these losses. In its pricing proposal, Essential Water proposed water losses of about 460 ML per year. These losses occur when treating water and transporting water through its existing network to deliver water services to customers. Essential Water assumed losses to be around 9% of its proposed water sales in 2020-21.

Table 6.4 Comparison of Essential Water's water sales to customers and its purchases from WaterNSW using the WaterNSW Pipeline (ML)

	2022-23	2023-24	2024-25	2025-26
IPART decision on Essential Water's forecast water sales volumes	5,089	5,069	5,050	5,030
Plus: Real water losses in Essential Water's existing network	460	458	456	453
Forecast of Essential Water's purchases from the WaterNSW Pipeline	5,549	5,527	5,505	5,483

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

6.5 Essential Water will continue to have a demand volatility adjustment mechanism

Our decision is

21. At the next determination of Essential Water's prices, to consider an adjustment to its notional revenue requirement to account for over-recovery or under-recovery of revenue due to material differences between forecast water sales and actual water sales over the 4 years from 1 July 2021 to 30 June 2025.
    - A material difference is defined as ± 5% of forecast revenue from water sales over the 4-year period.
    - Water sales forecasts for 2021-22 are the same as in IPART's 2019 final report.

Actual water sales will depend on several factors that can vary unexpectedly, including weather patterns and population changes. This creates risk in setting prices based on forecast water sales, as actual sales may vary and are difficult to predict accurately.

In addition, the demand volatility faced by Essential Water is different to other water utilities due to its small size and customer base. If one or more large customer leaves or enters the network (e.g. a mine), or customers decrease personal use in response to high inflation as mentioned by stakeholders,[111] actual water sales could deviate substantially from forecast water sales.

To address this risk, at the 2019 review, we accepted Essential Water's proposal to include a demand volatility adjustment mechanism (DVAM). We indicated at the 2019 review we would consider adjusting Essential Water's revenue in the subsequent determination period if actual water sales were 5% higher or lower than forecast (i.e. a demand volatility adjustment with a ±5% materiality threshold). This would ensure there is a reasonable match between Essential Water's revenue from water sales and revenue requirement.

Box 6.1 provides information how this mechanism works.

Box 6.1 How the demand volatility adjustment mechanism works

The DVAM gives IPART flexibility to adjust Essential Water's revenue in the following determination period if actual water sales materially differ from forecast water sales.

For example, in the case where actual sales are lower than forecast, we would consider whether:

- Essential Water's costs could decline with reduced demand.
- There is an economic case for 'stranding' some of Essential Water's assets.
- A DVAM should be used to recover some of the revenue shortfall from Essential Water's customers.

In section 5.9, we discussed how actual water sales volumes were lower than the volumes we used to set prices over the 2019 determination period. Essential Water proposed to include an adjustment when setting prices over the next 4 years to recover the revenue shortfall over the last 3 years because of lower water sales. The adjustments we made are discussed in detail in section 5.9.

Essential Water proposed we continue to apply a DVAM in the next determination period. However, it would not include the ±5% materiality threshold or 'deadband' we typically include for DVAMs.[112] This means we would adjust Essential Water's revenue requirement in the next determination period for any under-recovery (or over-recovery) of revenue due to differences between actual and forecast water sales in the 2022 determination period.

Our decision is to consider applying a DVAM at the next determination period. However, we have not accepted Essential Water's proposal to remove the materiality threshold, as this may reduce its incentive to accurately forecast water sales. We consider the DVAM should include a ±5% materiality threshold, consistent with the current deadband for Essential Water and the deadbands we have used for DVAMs in other water reviews. Since the Draft Report, Essential Water indicated support for our decision.[113]

We would also continue to calculate the DVAM on a one year lagged basis. So, at the next determination, we would compare forecast and actual water sales over the period from 2021-22 to 2024-25 (that is, the last year of the 2019 Determination and the first 3 years of the 2022 Determination). This ensures any adjustments are based on actual water sales.

Chapter 7

Water prices

07

Summary of our decisions for water prices

Most water prices would be stable

The treated and untreated water usage prices for almost all customers would remain stable over 4 years, before inflation. We are also holding the water service prices constant (before inflation).

We continued to harmonise untreated and chlorinated water usage prices

Consistent with our approach in the 2019 review, we are continuing to:

- Gradually increase the untreated water usage price for customers who currently receive water directly from the EW Pipelines (i.e. the Menindee, Stephens Creek and Umberumberka pipelines) over the determination period, so that it transitions towards the usage price for other untreated water customers.
- Gradually increase the chlorinated water usage price so that it transitions to the untreated water usage price.

We consider these prices are affordable

NSW taxpayers currently subsidise water prices in Broken Hill to offset the significant cost of building the WaterNSW Pipeline. The NSW Government has confirmed it will continue this existing funding commitment, so that Essential Water's prices do not increase as a result of the WaterNSW Pipeline.

In addition to the WaterNSW Pipeline subsidy, Essential Water considered NSW taxpayers should fund a new affordability subsidy to partly offset a proposed increase in its own costs. However, we found opportunities to reduce Essential Water's proposed costs. We also adopted a lower WACC than proposed by Essential Water. This means most prices are increasing by inflation only, and so we consider there is currently no case for the proposed affordability subsidy.

That said, we do recommend the NSW Government fund the cost of gradually transitioning chlorinated water and untreated water customers to a consistent usage price. We are gradually implementing the increases to minimise the potential bill shock for these customers.

Essential Water's prices for water services comprise 2 components:

- A variable usage price (expressed as $ per kilolitre (kL) of metered water supplied).
- A fixed service price (expressed as $ per year).

Customers pay a different water usage price if they receive treated water, chlorinated water or untreated water. This reflects that there are different costs involved in supplying these different types of water services to customers.

Residential customers pay a standard service price, regardless of whether their property is a house or a unit in a multi-premises property. For larger non-residential customers, the service price depends on their meter size, and is set with reference to a 20mm meter.

7.1 Most water prices would be stable

Table 7.1 sets out our decision on Essential Water's water prices, before inflation.

- We are holding most water usage prices constant, apart from the usage prices for untreated water for EW Pipeline customers and chlorinated water customers. These prices will continue to gradually increase towards the untreated water usage price that most customers pay.
- We are also holding water service prices constant.

In comparison, Essential Water proposed NSW taxpayers fund a new affordability subsidy. The aim was to keep its proposed price increases to around 7% over 4 years, before inflation (Table 7.2). Otherwise its prices would increase by closer to 22% over that period under its proposal, before inflation.

Table 7.1 Decision on water prices ($2021-22) – without inflation

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	Change from current to 2025-26
Usage prices ($/kL)						
Treated	1.88	1.88	1.88	1.88	1.88	0.0%
Untreated[a]	1.65	1.65	1.65	1.65	1.65	0.0%
Untreated (EW Pipeline customers)[b]	1.06	1.14	1.23	1.31	1.40	31.8%
Chlorinated[c]	1.40	1.46	1.53	1.59	1.65	17.9%
Service prices ($/year)						
Residential	342.89	342.89	342.89	342.89	342.89	0.0%
Non-residential meter based 20mm price[d]	342.89	342.89	342.89	342.89	342.89	0.0%
• 25mm connection	535.78	535.78	535.78	535.78	535.78	0.0%
• 40mm connection	1,372	1,372	1,372	1,372	1,372	0.0%
• 50mm connection	2,143	2,143	2,143	2,143	2,143	0.0%
• 80mm connection	5,486	5,486.24	5,486	5,486	5,486	0.0%
• 100mm connection	8,572	8,572	8,572	8,572	8,572	0.0%

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	Change from current to 2025-26
• 150mm connection	19,288	19,288	19,288	19,288	19,288	0.0%
Mines ($'000s)						
• Perilya	2,408	2,408	2,408	2,408	2,408	0.0%
• CBH	581	581	581	581	581	0.0%

a. Untreated water is supplied to customers in Broken Hill, including Broken Hill City Council and the mines.
b. Customers along the EW Pipelines (i.e. the Menindee, Stephens Creek and Umberumberka pipelines) are connected to the Mica Street reticulation network in Broken Hill. They receive untreated water sourced from the Murray River via the WaterNSW Pipeline.
c. Chlorinated water is supplied to residential and non-residential customers in Silverton and Sunset Strip.
d. The meter-based charges are set with reference to the 20mm meter charge using the following formula: (meter size)^2 x 20mm meter charge / 400. We have calculated service charges for larger meter sizes using this formula.
Source: IPART analysis.

Table 7.2 Essential Water's proposed water prices ($2021-22) – without inflation

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	Change from current to 2025-26
Usage prices ($/kL)						
Treated	1.88	1.91	1.94	1.97	2.00	6.4%
Untreated[a]	1.65	1.68	1.71	1.73	1.76	6.4%
Untreated (EW Pipeline customers)[b]	1.06	1.16	1.27	1.38	1.48	39.9%
Chlorinated[c]	1.40	1.48	1.57	1.66	1.76	25.4%
Service prices ($/year)						
Residential	342.89	348.45	354.09	359.82	365.66	6.6%
Non – residential meter based 20mm price[d]	342.89	348.45	354.09	359.82	365.66	6.6%
• 25mm connection	535.78	544.45	553.27	562.22	571.34	6.6%
• 40mm connection	1,372	1,394	1,416	1,439	1,463	6.6%
• 50mm connection	2,143	2,178	2,213	2,249	2,285	6.6%
• 80mm connection	5,486	5,575	5,665	5,757	5,850	6.6%
• 100mm connection	8,572	8,711	8,852	8,996	9,141	6.6%
• 150mm connection	19,288	19,600	19,918	20,240	20,568	6.6%
Mines ($'000s)						
• Perilya	2,408	2,447	2,487	2,527	2,568	6.6%
• CBH	581	590	600	610	620	6.6%

a. Untreated water is supplied to customers in Broken Hill, including Broken Hill City Council and the mines.
b. Customers along the EW Pipelines (i.e. the Menindee, Stephens Creek and Umberumberka pipelines) are connected to the Mica Street reticulation network in Broken Hill. They receive untreated water sourced from the Murray River via the WaterNSW Pipeline.
c. Chlorinated water is supplied to residential and non-residential customers in Silverton and Sunset Strip.
d. The meter-based charges are set with reference to the 20mm meter charge using the following formula: (meter size)^2 x 20mm meter charge / 400. We have calculated service charges for larger meter sizes using this formula.
Note: Essential Water's pricing proposal presented its prices in $2022-23. To allow comparison with our prices in Table 7.1, we have converted Essential Water's proposed prices to $2021-22 in this table. These prices include Essential Water's proposed new affordability subsidy.
Source: IPART analysis. Essential Water, Essential Water Pricing Proposal, June 2021, p 92.

7.1.1 Our decisions mean most of Essential Water's water prices would increase by inflation only

We adjust Essential Water's prices each year for inflation. Table 7.3 shows our water usage and service prices for Essential Water that will apply in 2022-23, including inflation of 5.1%.

Table 7.3 Water prices ($2022-23) – with inflation

	2022-23	Change from current to 2022-23
Usage prices ($/kL)		
Treated	1.98	5.1%
Untreated[a]	1.73	5.1%
Untreated (EW Pipeline customers)[b]	1.20	13.5%
Chlorinated[c]	1.54	9.8%
Service prices ($/year)		
Residential	360.38	5.1%
Non–residential meter based 20mm price[d]	360.38	5.1%
• 25mm connection	563.09	5.1%
• 40mm connection	1,442	5.1%
• 50mm connection	2,252	5.1%
• 80mm connection	5,766	5.1%
• 100mm connection	9,010	5.1%
• 150mm connection	20,271	5.1%
Mines ($'000s)		
• Perilya	2,531	5.1%
• CBH	611	5.1%

Source: IPART analysis.

7.2 We have considered the affordability of water and wastewater prices

We recommend:

3. That the NSW Government review the appropriateness of pensioner concessions for water and wastewater bills across the state.

Affordability and high inflation were key concerns among stakeholders for this review. Some stakeholders supported our draft decision to hold most of Essential Water's water and wastewater prices constant and to increase them for inflation only.[114] However, Broken Hill City Council requested we consider capping the inflation increase to 3.5% per year.[115]

Stakeholders outlined various social and economic factors that could make the Broken Hill community vulnerable to price increases:

- The population of Broken Hill is ageing, and there are many residents who are unemployed or receiving income support. Inflation increases particularly impact older residents, because they may be on income support payments that cannot meet the rising cost of water.
- Broken Hill has a relatively higher Indigenous population compared to other areas in the NSW, and Indigenous children typically have higher lead levels than non-indigenous children. This highlights the importance of residents being able to access affordable water to suppress lead dust and mitigate lead exposure.
- The financial impact of Covid-19 on businesses and families has been significant and people are still recovering financially. [116]

In response to this feedback from stakeholders, we have reviewed the affordability of our final prices and bills. Overall, we consider they remain affordable. Prices for most customers are remaining stable, before inflation. When compared with similar utilities, typical bills in Broken Hill would still be in the middle range of what households pay in other regional areas (see section 10.5). Further, typical bills under our decisions would make up about 2.5% of the median yearly household income.

Our decision to continue increasing the usage prices for untreated water (EW Pipeline customers) and chlorinated water means they will better reflect the cost of Essential Water supplying these water services to its customers. We are gradually implementing the increases to minimise the potential bill shock for these customers.

Given our decision to hold water service prices constant (before inflation), this moderates the overall bill impacts for EW Pipeline customers receiving untreated water and chlorinated water customers. Over 4 years, water bills for EW Pipeline customers would increase by around 3.3% a year on average,[a] while chlorinated water customer bills would increase by around 2.4% a year on average[b] (in each case, before inflation). See Chapter 10 for a discussion on how our prices affect customer bills.

While we do not agree with proposals to cap the annual inflation adjustment to prices, we acknowledge the current environment of high inflation is putting pressure on household budgets. However, we need to balance this with Essential Water being able to recover its costs so it can continue to provide critical water and wastewater services in Broken Hill.

We have reviewed Essential Water's costs and identified savings. Through this process we are able to limit most price increases to inflation only, while ensuring Essential Water has sufficient revenue to cover its necessary costs.

[a] The water bill estimate is for an EW Pipeline customer with a 20mm meter and 250kL per year water usage.
[b] The water bill estimate is for a chlorinated water customer with 300kL per year water usage.

We recognise that prices increasing for inflation could have substantial impacts on some customers, including pensioners. We are conscious the pensioner rebate available to Essential Water customers has not increased for many years. This is set in legislation at a capped amount and is significantly lower than the rebate available to pensioners served by Sydney Water and Hunter Water. Therefore, we are recommending that the NSW Government review pensioner concessions for water and wastewater bills across NSW.

7.3 Our prices factor in the existing WaterNSW Pipeline subsidy

We recommend:

4. That Essential Water work with NSW Government agencies and explore options to provide customers with greater long-term certainty about the status of the WaterNSW Pipeline subsidy.

NSW taxpayers currently subsidise water prices in Broken Hill to offset the significant cost of building the WaterNSW Pipeline. When we set prices for Essential Water in 2019, the NSW Government committed to subsidising Essential Water's prices for 4 years, so prices would not increase as a result of the WaterNSW Pipeline.[117] The NSW Government has confirmed it will continue this existing funding commitment for the next 4 years,[118] and our prices factor in this commitment.

Stakeholders welcomed the NSW Government's commitment, but some were concerned it did not extend beyond the next 4 years.[119] Broken Hill City Council and Outback Astronomy noted the NSW Government had not given an undertaking to provide a permanent Pipeline subsidy to guarantee its costs are not passed onto customers in the future.[120]

Mr Roy Butler, Member for Barwon (NSW Legislative Assembly), also raised his concern that the subsidy only applies for this price review.[121] He requested a longer-term view of water supply and prices be taken and proposed that the NSW Government support the Pipeline in perpetuity.[122]

We acknowledge the concerns stakeholders have about the continuation of the WaterNSW Pipeline subsidy. We encourage Essential Water to addresses this issue at the next price review under our new regulatory framework. This framework aims to ensure Essential Water consults with its customers and develops long-term plans to deliver on the outcomes its customers value.

Submissions indicate securing the future of the subsidy would be a key outcome for Essential Water's customers. We have therefore recommended Essential Water work with NSW Government agencies and explore options to provide customers with greater long-term certainty about the status of the WaterNSW Pipeline subsidy and to reflect this in its next pricing proposal.

In addition to the WaterNSW Pipeline subsidy, Essential Water proposed NSW taxpayers fund a new affordability subsidy, covering some of the proposed increase in its non-Pipeline costs.[123] The aim was to keep its price increases to less than 2% a year on average, before inflation. Otherwise they would increase by closer to 6% a year on average, before inflation.

As most prices under our decisions are increasing by inflation only, we consider there is currently no case for the proposed subsidy.

7.4 Being able to access and use affordable, safe and reliable water is important for the Broken Hill region

Water access and use in the Broken Hill region is an important concern for stakeholders, given the region relies on water to manage the hot and dry climate and to mitigate elevated levels of lead in the environment.

Several stakeholders noted that an increase to water prices could result in people reducing their water use. This may limit the community's ability to use water to actively manage lead exposure (e.g. wet wiping of surfaces), cool homes and maintain the greenspaces required to suppress lead dust.[124]

Many stakeholders considered a decline in these greenspaces would increase the risks to health and wellbeing to Broken Hill residents. Further, Broken Hill was still recovering from the impacts of severe drought, so increased water usage is needed to re-establish greenspaces.[125]

Stakeholders were also concerned about the effect reduced water use may have on the liveability of the region, including its ability to attract investment and skilled workers to Broken Hill.[126] For example, RDAFW indicated there are opportunities to develop mining operations for rare minerals in the region. It considers there should be a more holistic approach to planning that takes into account the future development and sustainability of the Far West region[127].

We recognise that Broken Hill faces unique environmental pressures. Reducing water use may not be in the public interest, given its important role in lead suppression. Therefore, being able to access and use affordable, safe and reliable water has a critical on impact on health and wellbeing in the region. It also affects the liveability of Broken Hill and its ability to generate sustainable employment and investment.

In this current price review, we are generally keeping prices stable, which assists with affordability. For the next price review, we plan to introduce our new regulatory framework. This framework is centred around delivering customer value.

We expect Essential Water to consult with its customers – including residential, non-residential and mining customers – about their priorities for water access and use, as well as their preferences around water bills. Essential Water should identify how its proposal fits in with these priorities and preferences, so it can promote better outcomes for its customers.

In particular, Essential Water may want to propose price structures that factor in Broken Hill's circumstances. For example, under the new regulatory framework, Essential Water could explore funding arrangements to deal with the lead issue.

Our pricing decisions are one part of the broader approach required to facilitate water access and use which is in the best interests of customers and the community. We agree with the view from stakeholders that a holistic approach is required.

We consider it is a priority for Essential Water, Broken Hill City Council and key government agencies – such as the Department of Planning and Environment and NSW Health – to work together to develop a draft water plan for Broken Hill for consideration by the NSW Government. The plan should identify the optimal level of water usage in Broken Hill to mitigate the health risks posed by lead dust and consider a longer-term approach to the NSW Government subsidy for the WaterNSW pipeline. We encourage Essential Water to be a proactive participant in development of this plan and in consultation with stakeholders and customers.

7.5 We maintained the current water and wastewater price structures

Our decision is:

22. To accept Essential Water's proposal to maintain the current 2-part tariffs for water and wastewater prices.

Essential Water proposed to maintain the current price structures for water and wastewater services.[128] This would mean that variable usage charges continue to account for around 60% of residential bills on average, and fixed service charges account for the remaining 40%.

Essential Water's customer survey results suggest that about 75% of residential customers and 72% of business customers would like the current fixed/variable proportion of their water bills to be maintained. About 14% of residential customers and 28% of business customers said that if the proportion were to change, that they would prefer to increase the proportion of variable usage charges.[129]

We consider maintaining the current 2-part price structure for water and wastewater services is appropriate as it provides certainty and stability for both customers and Essential Water. We note that Essential Water's customer survey results suggest that most customers would prefer we maintain the current price structure and balance between fixed and usage charges.

In its submission to our Draft Report, Essential Water accepted our decision to maintain the current 2-part tariffs for water and wastewater.[130]

7.6 We are holding the treated water usage price constant

Our decision is:

23. To hold the current treated water usage price of $1.88 per kL constant (before inflation) over the 2022 determination period. This means it would increase by the rate of inflation only.

Our decision is to hold the current treated water usage price of $1.88 per kL constant (before inflation) over the 2022 determination period. This means it would increase by the rate of inflation only.

This decision takes account of customer preferences to maintain the current split of variable/fixed charges for their water bills. It also reflects our preference for setting usage prices with reference to the marginal cost of supply.

- As outlined in section 7.5, Essential Water's customer survey results suggest that most customers prefer we maintain the current variable/fixed proportion of their bills. Usage and service charges account for around 60% and 40% of residential water charges, respectively. Our decision would maintain these proportions.
- In the 2019 review, we estimated Essential Water's short run marginal cost (SRMC) of supplying treated water.[c] We found the current price of $1.88 per kL was within a reasonable range of our estimate of SRMC.[131] We have not been provided with information to suggest this is no longer the case.

Essential Water accepted our draft decision to hold the treated water usage price constant over the 2022 determination period, subject to expenditure updates set out in its submission.[132]

7.7 We continued to harmonise untreated and chlorinated water usage prices

Our decisions are:

24. To hold the current usage price for untreated water of $1.65 per kL constant (before inflation) over the 2022 determination period. This means it would increase by the rate of inflation only.

25. To gradually transition the usage price for untreated water (EW Pipeline customers) to $1.40 per kL by 2025-26, as per Table 7.4.

26. To gradually transition the usage price for chlorinated water to $1.65 per kL by 2025-26, as per Table 7.5.

We recommend:

5. Consistent with Recommendation 2, that the NSW Government fund the cost of transitioning untreated water (EW Pipeline customers) and chlorinated water usage prices over time.

[c] We typically set water usage prices with reference to the long run marginal cost (LRMC) of water supply in price reviews where future growth and water augmentation is expected. In the 2019 review, we noted that, following construction of the WaterNSW Pipeline, no further large-scale augmentation of the water supply was foreseeable in the future for Broken Hill. Therefore, we considered the LRMC and SRMC estimates should converge. Given it is more straightforward to calculate SRMC compared with LRMC, we estimated SRMC in the 2019 review.

Our decision is to hold the current untreated water usage price of $1.65 per kL constant (before inflation) over the 2022 determination period. This means it will increase by the rate of inflation only. In the 2019 review, we estimated Essential Water's SRMC of supplying untreated water.[133] The current price was within a reasonable range of our estimate of SRMC. We have not been provided with information to suggest this is no longer the case.

Consistent with our approach in the 2019 review, we are continuing to:

- Gradually increase the untreated water usage price for customers who currently receive water directly from the EW Pipelines (i.e. the Menindee, Stephens Creek and Umberumberka pipelines) over the determination period, so that it transitions towards the usage price for other untreated water customers.
- Gradually increase the chlorinated water usage price so that it transitions to the untreated water usage price.

Essential Water considered the trajectory we established over the 2019 determination period to transition these prices was reasonable. It noted this would move these prices towards cost-reflective levels, while mitigating bill shock and adverse impacts on affected customers.[134] Our decisions mean these prices follow the same trajectory for the 2022 determination period.

Essential Water accepted our draft decision to continue harmonising the untreated and chlorinated water usage prices over the 2022 determination period, subject to expenditure updates set out in its submission.[135] It also accepted our recommendation that the NSW Government fund the cost of transitioning the untreated water (EW Pipeline) and chlorinated water usage prices over the 2022 determination period.[136]

7.7.1 Accepting Essential Water's proposal to continue transitioning towards a single untreated water usage price

Essential Water supplies untreated water to a small number of customers along the Menindee, Stephens Creek and Umberumberka pipelines, as well as to other customers such as Broken Hill City Council and the mines. These customers currently pay different usage prices. Our decisions move these prices closer to a single usage price, which better reflects the cost of supplying untreated water.

The untreated water price is $1.65 per kL for most untreated water customers and $1.06 per kL for EW Pipeline customers. Our decision is to hold the general untreated water of $1.65 per kL constant over the 2022 determination period, and to gradually transition EW Pipeline customers towards $1.65 per kL as per Table 7.4 below.

Table 7.4 Decision on usage price transition for untreated water (EW Pipeline customers) ($2021-22)

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26
Untreated water (EW Pipeline customers)	1.06	1.14	1.23	1.31	1.40

Source: IPART analysis.

At the 2014 review, we set usage prices for EW Pipeline customers lower than usage prices for other untreated water customers. This was to reflect lower costs of supply to service EW Pipeline customers, because they were not on the reticulation network. That is, they were supplied with untreated water directly from the Menindee pipeline and sourced from the Darling River (see section C.4 in Appendix C).

However, when the WaterNSW Pipeline came into operation during the 2019 determination period, this resulted in a change in the direction of water flowing through the Menindee, Stephens Creek and Umberumberka pipelines. These EW Pipeline customers started receiving untreated water sourced from the Murray River via the WaterNSW Pipeline. This meant the untreated water now travelled through Essential Water's reticulation network from Mica St and then to their pipelines (see section C.5 in Appendix C).

At the 2019 review, we decided to set a single usage price for untreated water, in line with the current price for most untreated water customers. The price difference between EW Pipeline customers and other untreated water customers was no longer justified once the WaterNSW Pipeline came into operation, as the cost of supplying the various untreated water customers was similar. To manage customer bill impacts, we decided to gradually transition EW Pipeline customers towards this single usage price for untreated water.

We have accepted Essential Water's proposal to continue this gradual transition, and follow the same price trajectory adopted at the 2019 review.[137] We have recommended the NSW Government fund the cost of the transition for the 2022 determination period ($106,000 over the 4-year period).

After 4 years, EW Pipeline customers will be paying usage prices that are around 85% of the usage prices paid by most untreated water customers.

Stakeholder submissions

In its submission to our Issues Paper, PIAC supported Essential Water's proposal.[138] However, Outback Astronomy, an EW Pipeline customer, disagreed with transitioning to the single untreated water usage price in both the Issues Paper,[139] and Draft Report submissions.[140] It indicated:

- Essential Water's proposed price increases were too high, and the main rationale for harmonising these usage prices - the change in direction of where untreated water flows from – was not justified.[141]
- It would be unfair to remove the price difference between EW Pipeline customers and other untreated water customers. Prices should reflect customer differences, which is lost if all untreated water usage prices move to a standard price.[142]

- EW Pipeline customers who received untreated water from their pipelines would pay almost as much as customers in Broken Hill who received treated water.[143] Further, it was expensive to treat the EW Pipeline water to achieve water that meets Australian Drinking Water Guidelines.[144]
- Essential Water had not sufficiently consulted with EW Pipeline customers to inform them about the proposed price increase.[145]

We have decided to continue harmonising the untreated water EW Pipeline usage price with the standard untreated water usage price. The cost of supplying untreated water to all of Essential Water's customers is now essentially the same. The standard untreated water usage price which EW Pipeline customers are transitioning to is less than the treated water usage price, as it factors in an estimate of water treatment costs.[146]

When the WaterNSW Pipeline came into operation, it meant there was a change in water supply and service costs. This is why we are moving to a single untreated water price. EW Pipeline customers now source their untreated water from the Murray River, which travels through Essential Water's reticulation network at Mica Street and then to their pipelines. This means EW Pipeline customers are now indistinguishable from other untreated water customers in Broken Hill, as they are all connected to the same water supply network.

Gradually increasing the usage price for EW Pipeline customers towards the usage price for other untreated water customers will better reflect the cost of supplying untreated water to them. Further, it means EW Pipeline customer will face the same incentives around water usage and maintaining greenspaces as other EW untreated water customers.

We have taken affordability concerns into account by making the price transition a gradual one. The price transition is occurring over 10 years to manage bill impacts and is a continuation of our decision in the 2019 price review. We have recommended the NSW Government continue to subsidise this transition. This means it would not be paid for by other Essential Water customers.

Untreated water usage prices for EW Pipeline customers would still be below the untreated water usage price for other customers at the end of the 2022 determination period. Bills for typical EW Pipeline customers would increase by around 3.3% a year on average (before inflation) over the 2022 determination period (see section 10.4 for discussion on customer impacts).

Our prices aim to reflect the costs Essential Water incurs in supplying customers with untreated water. The cost that some EW Pipeline customers may incur to treat the water from their pipelines is specific to them and we do not factor it into prices. The single untreated water usage price which EW Pipeline customers are moving towards is less than the treated water usage price. As explained above, it is within a reasonable range of our most recent estimate of Essential Water's supply costs (i.e. the SRMC of untreated water).

Outback Astronomy also commented that the quality of untreated water received by EW Pipeline customers could often be described as muddy, smelly or discoloured.[147] We discuss issues around water quality in section 1.4.

7.7.2 Accepting Essential Water's proposal to continue transitioning the chlorinated water usage price

Essential Water supplies chlorinated water to customers in Silverton and Sunset Strip.

Our decision is to gradually transition chlorinated water customers towards the untreated water usage price ($1.65 per kL) as per Table 7.5 below.

Table 7.5 Decision on usage price transition for chlorinated water ($2021-22) – without inflation

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26
Chlorinated water ($/kL)	1.40	1.46	1.53	1.59	1.65

Source: IPART analysis.

The usage price for chlorinated water is currently less than the untreated water usage price paid by most customers. In the 2019 review, we found Essential Water's cost of supplying chlorinated water was higher than the cost of supplying untreated water.[148] We therefore decided to increase the chlorinated water usage prices to the untreated water usage price, but spread the increases over several years to manage customer bill impacts.

We have accepted Essential Water's proposal to continue this gradual transition, and follow the same price trajectory adopted at the 2019 review.[149] We have recommended the NSW Government should fund the cost of the transition for the 2022 determination period ($16,000 over the 4-year period).

After 4 years, chlorinated water customers will be paying usage prices that equal the usage prices paid by most untreated water customers.

Stakeholder submissions

In its submission to our Issues Paper, the Silverton Village Committee expressed concern about Essential Water's proposed price increases.[150]

We are increasing the chlorinated water usage prices over several years, so it better reflects the costs of supplying chlorinated water to customers in Silverton and Sunset Strip. We are aiming to manage potential bill shocks by gradually implementing these increases. Bills for typical chlorinated water customers would increase by around 2.4% a year on average (before inflation) over the 2022 determination period (see section 10.2 for discussion on customer impacts).

7.8 We are holding the water service prices constant for residential, non-residential and mining customers

Our decisions are:

27. To hold the current water service prices constant over the 2022 determination period (before inflation), as shown in Table 7.6. This means water service prices would increase by the rate of inflation only.

28. To maintain our current pricing approach for new mining customers who commence operations during the 2022 determination period.

Our decision is to hold the current water service prices constant over the 2022 determination period (before inflation), as shown in Table 7.6. This means water service prices would increase by the rate of inflation only.

Essential Water accepted our draft decision to hold the current service prices constant over the 2022 determination period, subject to expenditure updates set out in its submission.[151]

Table 7.6 Decision on water service prices ($2021-22) – without inflation

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	Change from current to 2025-26
Residential	342.89	342.89	342.89	342.89	342.89	0.0%
Non–residential meter based 20mm price	342.89	342.89	342.89	342.89	342.89	0.0%
• 25mm connection	535.78	535.78	535.78	535.78	535.78	0.0%
• 40mm connection	1,372	1,372	1,372	1,372	1,372	0.0%
• 50mm connection	2,143	2,143	2,143	2,143	2,143	0.0%
• 80mm connection	5,486	5,486	5,486	5,486	5,486	0.0%
• 100mm connection	8,572	8,572	8,572	8,572	8,572	0.0%
• 150mm connection	19,288	19,288	19,288	19,288	19,288	0.0%
Mines ($'000s)						
• Perilya	2,408	2,408	2,408	2,408	2,408	0.0%
• CBH	581	581	581	581	581	0.0%

Source: IPART analysis.

7.8.1 Setting prices for existing mining customers

We accepted Essential Water's proposal and have maintained our current approach for setting the water service price for mining customers.[152] Therefore, we have held it constant, along with the water service prices for residential and non-residential customers.

In the Issues Paper, we indicated we may review how we set prices for existing mining customers. PIAC supported IPART considering if Essential Water's proposed prices reflected the impact mining customers had on its costs.[153]

In response to both the Issues Paper and Draft Report, Foundation Broken Hill urged that there should be new pricing arrangements for the mines in the event of existing mining operations ceasing, so there is limited impact on the community.[154] Namely, there should be more consultation with mining customers about transitioning prices to a more commercial arrangement.[155]

Currently, there is not a clear case for reconsidering the way water and wastewater services are set for the mines. A different arrangement between Essential Water and existing mining customers now could shift costs to other customers and increase prices.

Therefore, for simplicity, we have decided to maintain our current approach for setting the mines' water service prices. We expect Essential Water to consult with its customers for the next price review – including its mining customers – to determine what pricing approach for mining delivers the best value for its customers and the community. At the next determination, we will consider our approach for setting mines prices in light of this consultation undertaken by Essential Water.

7.8.2 Setting prices for new mining customers

Essential Water also proposed to maintain the current pricing approach for new mines.[156] It indicated a new mine (Cobalt Blue Mine) may become operational during the 2022 determination period.

We have accepted Essential Water's proposal. That is:

- If a new mine commences operations in the 2022 determination period, it will pay the same water usage charges as the existing mines and other customers.
- As an interim measure until the next price determination, any new mining customers will pay the same meter-based water service prices as other non-residential customers.

Essential Water supported our draft decision to maintain the current approach for new mining customers over the 2022 determination period.[157]

Foundation Broken Hill noted that there should be further consideration of the impact of a new mine in Broken Hill and the potential closure of existing mining operations in Broken Hill.[158]

While we are aware of potential mining projects in the future that could impact on water use and customer numbers, there are still too many uncertainties to change our approach on setting prices for new mines in this review. That said, if a new mine did come online during the determination period and it had a significant impact on Essential Water's operations, then we could consider re-opening the determination for further review.

Chapter 8

Wastewater prices

Summary of our decisions for wastewater prices

Wastewater prices would be stable

The wastewater water usage price and service prices would remain stable over 4 years, before inflation.

We have increased the estimate of wastewater discharged by residential customers

We accepted Essential Water's proposal to increase the deemed residential discharge allowance from 90 kL per year to 100 kL per year. We consider it is a reasonable estimate of the average yearly discharge by residential customers into the wastewater system.

We have maintained the way we set wastewater service prices for mining customers

Mining customers pay the wastewater service price applicable to a 100mm meter with a 100% discharge factor. Our decision is to maintain this approach, as we consider it best reflects the cost of providing wastewater services to these customers.

We have maintained total revenue from wastewater prices

Our decision to hold wastewater prices constant means Essential Water recover slightly more revenue than the wastewater notional revenue requirement. Conversely, water prices recover slightly less revenue than the water notional revenue requirement.

We consider that it is more appropriate to maximise price stability for customers, rather than remove this relatively small cross-subsidy between water and wastewater services.

- Residential customers pay a fixed service price, which is the same for houses and apartments. It comprises an access charge and a deemed wastewater usage charge.
- Non-residential customers pay a fixed service price based on their meter size, and a variable usage price for actual discharges into the wastewater system.[a]

[a] The service price for each customer is scaled-up from the base 20mm meter price to reflect the actual size of their meter before a discharge factor is applied.

8.1 Wastewater prices would be stable

Table 8.1 sets out our decision on Essential Water's wastewater prices, before inflation. Our decision is to hold all wastewater prices constant.

In comparison, Essential Water proposed NSW taxpayers fund a new affordability subsidy. The aim was to keep most of its proposed price increases to around 7% over 4 years, before inflation, see Table 8.2 Otherwise most of its prices would increase by closer to 22% over that period under its proposal, before inflation.

Table 8.1 Decision on wastewater prices ($2021-22) – without inflation

	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change from current to 2025-26 (%)
Usage price ($/kL)						
Non-residential	1.34	1.34	1.34	1.34	1.34	0.0%
Service prices ($/year)						
Residential	546.37	546.37	546.37	546.37	546.37	0.0%
Non – residential[a]						
• 20mm connection	608.24	608.24	608.24	608.24	608.24	0.0%
• 25mm connection	950.38	950.38	950.38	950.38	950.38	0.0%
• 40mm connection	2,432.96	2,432.96	2,432.96	2,432.96	2,432.96	0.0%
• 50mm connection	3,801.50	3,801.50	3,801.50	3,801.50	3,801.50	0.0%
• 80mm connection	9,731.84	9,731.84	9,731.84	9,731.84	9,731.84	0.0%
• 100mm connection	15,206.00	15,206.00	15,206.00	15,206.00	15,206.00	0.0%
• 150mm connection	34,213.50	34,213.50	34,213.50	34,213.50	34,213.50	0.0%

a. Non-residential prices assume a 100% discharge factor. Bills will depend on discharge factors assigned by Essential for individual customers.
Note: Wastewater service prices for non-residential customers and mining customers are based on water meter size. The meter-based prices are set with reference to the 20mm meter price using the following formula: (meter size)^2 x 20mm meter price / 400 x discharge factor. We have calculated service prices for larger meter sizes based on this formula,
Source: IPART analysis.

Table 8.2 Essential Water's proposed wastewater prices ($2021-22) – without inflation

	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change from current to 2025-26 (%)
Usage price ($/kL)						
Non-residential	1.34	1.37	1.39	1.40	1.42	6.3%
Service prices ($/year)						
Residential	546.37	568.84	578.05	587.41	596.94	9.3%
Non – residential[a]						
• 20mm connection	608.24	618.10	628.11	638.28	648.62	6.6%
• 25mm connection	950.37	965.78	981.41	997.32	1,013.47	6.6%
• 40mm connection	2,432.96	2,472.37	2,512.43	2,553.13	2,594.49	6.6%
• 50mm connection	3,801.50	3,863.08	3,925.67	3,989.26	4,053.89	6.6%

	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change from current to 2025-26 (%)
• 80mm connection	9,731.83	9,889.49	10,049.71	10,212.51	10,377.95	6.6%
• 100mm connection	15,206.00	15,452.34	15,702.66	15,957.04	16,215.55	6.6%
• 150mm connection	34,213.49	34,767.76	35,331.00	35,903.36	36,485.00	6.6%

[a] Non-residential prices assume a 100% discharge factor. Bills will depend on discharge factors assigned by Essential for individual customers.
Note: Wastewater service prices for non-residential customers and mining customers are based on water meter size. The meter-based prices are set with reference to the 20mm meter price using the following formula: (meter size)^2 x 20mm meter price / 400 x discharge factor. These prices include Essential Water's proposed new affordability subsidy.
Source: IPART analysis, Essential Water, Essential Water Pricing Proposal, June 2021, p 94.

8.1.1 Our decisions mean Essential Water's wastewater prices would increase by inflation only

We adjust Essential Water's prices each year for inflation. Table 8.3 shows our wastewater prices for Essential Water that will apply in 2022-23, including inflation of 5.1%

Table 8.3 Wastewater prices ($2022-23) – with inflation

	2022-23	Change from current to 2022-23 (%)
Usage price ($/kL)		
Non-residential	1.41	5.1%
Service price ($/year)		
Residential	574.23	5.1%
Non – residential		
• 20mm connection	639.26	5.1%
• 25mm connection	998.84	5.1%
• 40mm connection	2,557.04	5.1%
• 50mm connection	3,995.38	5.1%
• 80mm connection	10,228.16	5.1%
• 100mm connection	15,981.50	5.1%
• 150mm connection	35,958.39	5.1%

Source: IPART analysis

8.2 We are holding the wastewater usage price constant

Our decision is:

29. To hold the current wastewater usage price of $1.34 per kL constant over the 2022 determination period (before inflation). This means it would increase by the rate of inflation only.

Our decision is to hold the wastewater usage price of $1.34 per kL constant over the 2022 determination period (before inflation). This means it would increase by the rate of inflation only.

This decision reflects our preference for setting usage prices with reference to the marginal cost of supply. In the 2019 review, we estimated Essential Water's short run marginal cost (SRMC) of supplying treated water.[b] We found the current price of $1.34 per kL was within a reasonable range of our estimate of SRMC.[159] We have not been provided with information to suggest this is no longer the case.

In response to our Draft Report, Essential Water accepted our decision to hold the current wastewater usage price constant over the 2022 determination period, subject to expenditure updates set out in its submission.[160]

8.3 We are holding the wastewater service prices constant

Our decisions are:

30. To hold the current wastewater service prices constant over the 2022 determination period (before inflation). This means they would increase by the rate of inflation only.

31. To increase the deemed residential discharge allowance for wastewater from 90 kL per year to 100 kL per year.

32. To maintain our current approach for setting the wastewater service price for the mines.

After calculating the revenue from wastewater usage prices and trade waste prices (discussed in Chapter 9), wastewater service prices are calculated as a residual to recover Essential Water's efficient costs of providing wastewater services.

[b] While we typically set water usage prices with reference to the long run marginal cost (LRMC) of water supply in price reviews, in Essential Water's case we use SRMC (see Chapter 7). We currently set Essential Water's wastewater usage prices with reference to the SRMC of supplying wastewater services, as there is a lack of information on the LRMC.

Our decision is to hold the wastewater service prices constant over the 2022 determination period (before inflation). This means they would increase by the rate of inflation only.

We have also made decisions to accept Essential Water's proposal to:

- Increase the deemed residential discharge allowance from 90 kL to 100 kL per year. We consider it is a reasonable estimate of the average yearly discharge by residential customers into the wastewater system.
- Maintain the way we set wastewater service prices for mining customers.

Essential Water accepted our draft decision to hold the wastewater service prices constant over the 2022 determination period, subject to expenditure updates set out in its submission.[161]

8.3.1 Increasing the deemed residential discharge allowance

Residential customers pay a fixed wastewater service price that is the same for houses and apartments. It comprises an access charge and a deemed wastewater usage charge,[c] and is typically calculated using the following formula:

$$\textbf{\textit{Residential wastewater service price}} = discharge\ factor_1 \times non-residential\ wastewater\ service\ price + \left(discharge\ factor_2 \times typical\ residential\ water\ usage\right)^{d} \times wastewater\ usage\ price$$

The first line of the formula is the access charge, while the second line is the deemed wastewater usage charge.

- The access charge is a standard charge that applies to all residential customers. It is calculated as: 70% discharge factor x 20mm meter charge.
- The deemed wastewater usage charge reflects an estimate of average residential wastewater discharges. It is calculated as: the deemed residential discharge allowance x the wastewater usage price.

We have made a decision to accept Essential Water's proposal to increase the deemed residential discharge allowance from 90 kL to 100 kL per year.[162] This is supported by our consultant, the CIE, who analysed Essential Water's residential wastewater connections, Integrated Water Cycle Management Strategy and discharge volumes.

- In preparing its pricing proposal, Essential Water examined discharge volumes and concluded that average residential discharges were likely to be between 105 kL and 110 kL per year.[163] To reduce bill shock, Essential Water proposed increasing the residential discharge volume from 90 kL to 100 kL per year over the 2022 determination period as a means of gradually transitioning to higher volumes over time.[164]

[c] This means that residential customers do not face an explicit wastewater usage charge.

[d] This part of the formula ($discharge\ factor_2 \times typical\ residential\ water\ usage$) is the deemed residential discharge allowance.

- The CIE analysis found the average discharge volume for residential customers would be similar to Essential Water's projections.[165] It therefore recommended accepting Essential Water's proposal to increase the residential deemed discharge allowance from 90 kL to 100 kL per year.[166]
- That said, the CIE did consider Essential Water's proposal was conservative. It noted using a deemed residential discharge allowance of 100 kL per year implied an effective discharge factor of around 40%.[167] In comparison, Sydney Water estimated an effective discharge factor of 68% per household.[168]

While we have increased the deemed residential discharge allowance, we have departed from using the existing formula to set the residential wastewater service price. Adhering to this formula would have meant that – even if all other wastewater usage and service prices remain constant – the residential wastewater service price would increase.[e] Instead, we have held the residential wastewater service price constant. This maximises price stability for customers, while also ensuring Essential Water's efficient costs are recovered.

In response to our Draft Report, Essential Water accepted our decision to increase the deemed residential discharge allowance for wastewater from 90 kL per year to 100 kL per year.[169]

8.3.2 Maintaining the way we set wastewater service prices for mining customers

Mining customers currently pay the wastewater service price applicable to a 100mm meter with a 100% discharge factor.[170] Our decision is to maintain this approach.

Essential Water considered its current wastewater price structure for mining customers remains cost-reflective and equitable, as meter size, adjusted for discharge factors, is a reasonable indicator of a customer's draw on the network. Because the mines' wastewater discharge has remained stable over the 2014 and 2019 determinations, Essential Water proposed maintaining the current approach for setting wastewater prices for mining customers.[171]

In making our decision we considered that mining customers' discharges into the wastewater system have remained constant over the previous determination periods and are forecast to continue to remain constant.[172] Charging mines the wastewater service price applicable to a 100mm meter with a 100% discharge factor continues to best reflect the cost of providing wastewater services to these customers.

Essential Water supported our draft decision to maintain the current approach for setting the wastewater service price for the mines.[173]

[e] The shift to a higher deemed residential discharge allowance – from 90 kL to 100 kL per year – would have resulted in a higher residential wastewater service price under the existing formula.

8.4 We have maintained total revenue from wastewater prices

Our decision to hold wastewater prices constant means Essential Water recovers slightly more revenue than the wastewater notional revenue requirement. Conversely, water prices recover slightly less revenue than the water notional revenue requirement (see Table 8.4).

Table 8.4 Decision on revenue from water and wastewater prices ($millions, $2021-22)

	2022-23	2023-24	2024-25	2025-26	Total
Water					
• Water revenue[a]	16.6	16.6	16.5	16.5	66.3
• Government subsidies[b]	20.3	20.3	20.3	20.2	81.1
Less water notional revenue requirement	38.4	38.5	37.9	37.4	152.2
Difference	*-1.5*	*-1.6*	*-1.1*	*-0.7*	-4.8
Wastewater					
• Wastewater revenue (including trade water revenue from customers)	7.0	7.0	7.1	7.1	28.2
Government subsidy for trade waste[c]	0.2	0.2	0.1	0.1	0.6
Less wastewater notional revenue requirement	5.1	6.0	6.4	6.5	24.0
Difference	*2.1*	*1.2*	*0.8*	*0.7*	4.8

a. This includes water revenue from water prices, as well as miscellaneous and ancillary charges.
b. This includes our recommended government subsidies for WaterNSW Pipeline costs, as well as to transition EW Pipeline customers receiving untreated water and chlorinated water customers towards the usage prices for other untreated water customers.
c. This is the difference between the full revenue that Essential Water would recover under DPE's guideline prices for trade waste and the revenue Essential Water is expected to recover under our transitioned prices for trade waste (see section 9.1).
Note: Totals may not sum due to rounding.
Source: IPART analysis.

We consider that it is more appropriate to maximise price stability for customers, rather than remove the relatively small cross-subsidy between water and wastewater services at this point in time.

Chapter 9

Prices for other services

Summary of our decisions for other services

We have largely accepted Essential Water's proposed trade waste prices

Our decision is to accept Essential Water's proposal to hold fixed prices constant (before inflation) and continue to transition usage prices to the Department of Planning and Environment's (DPE) guideline prices.

We have also accepted Essential Water's proposal to remove usage prices for compliant Category 1 and Category 1a customers because they are relatively low impact customers.

We have not accepted Essential Water's proposal to remove mass-based pricing for Category 3 customers. Mass-based pricing is an important element of best practice wastewater management for local governments and water utilities. We have decided to retain all mass-based prices from 2019 and continue to increase them to DPE's guideline prices.

We increased miscellaneous prices by inflation only

Our decision is to hold miscellaneous prices constant for the 2022 Determination period (before inflation). They have previously been reviewed in 2019 and there has been no material change since then.

We have continued to not set recycled water prices

Our decision is to continue to defer setting recycled water prices and to deduct 50% of the revenue received from recycled water sales from the NRR for regulated services.

We have maintained the current price structures for unmetered properties and unconnected properties

Consistent with our pricing principles we have made a decision that unmetered properties should pay the standard residential water service price plus a higher deemed level of water consumption of 300 kL.

Setting the deemed consumption amount higher provides an incentive for small water users to have a meter installed. This approach is consistent with other utilities we regulate.

We have made a decision to maintain the current price structure for unconnected properties. Unconnected properties should not be charged service and usage prices because recovering these are inherently difficult and places an administrative cost on Essential Water's business. Unconnected properties do not directly impose costs on Essential Water's business. Properties that have been disconnected due to non-payment should not be charged water or wastewater prices.

9.1 We have largely accepted Essential Water's proposed trade waste prices

Trade waste is any liquid waste other than wastewater of a domestic nature. Trade waste discharge places greater demands on the wastewater system and has higher costs of treatment than domestic wastewater. If trade waste is not managed, it could pose problems for the wastewater system, as well as to public health and the environment.

Trade waste is discharged by commercial and industrial customers. Essential Water has 4 charging categories – 1, 1a, 2 and 3. The higher the category, the higher the risks of discharge to the wastewater system.

- **Category 1** discharges require nil or minimal pre-treatment.
- **Category 1a** discharges require prescribed pre-treatment but have low impact.
- **Category 2** discharges are medium risk and have prescribed pre-treatment.
- **Category 3** discharges are high risk and are usually large industrial businesses.

Box 9.1 provides an overview of the different types of fixed and variable trade waste prices we have set for Essential Water.

Box 9.1 Essential Water's trade waste prices

Essential Water's trade waste prices include fixed prices and variable prices ($ per kL or $ per kg discharged).

Fixed prices include:

- **Application fee** – which recovers the costs of administration and technical services provided in processing a trade waste application.
- **Annual fee** – which recovers the costs for ongoing administration and scheduled inspections (including monitoring) and varies by the different trade waste categories to reflect the varying complexity of the inspection and administration requirements of different types of discharge.
- **Re-inspection fee** – which recovers the costs of unplanned inspections or re-inspections of premises (e.g. where there may be suspected non-compliance with approval conditions), above and beyond the costs of inspection activities covered by application or annual fees.
- **Food waste disposal fee** – which applies where Essential Water has approved the use of an existing food waste disposal unit for a hospital, nursing home or other eligible facility, and is charged on the basis of the number of beds in that facility.

Box 9.1 Essential Water's trade waste prices

Variable prices include:

- **Volume-based prices** ($/kL) for Category 2 customers – which reflect the additional costs (above domestic-strength wastewater) of trade waste discharges imposed on the wastewater network.
- **Non-compliant volume-based prices** ($/kL) for Categories 1, 1a and 2 customers – which are higher usage fees that are applied when a discharger has not installed or maintained appropriate pre-treatment equipment.
- **Excess mass-based prices** ($/kg) for Category 3 customers – applicable for substances discharged in excess of the 'deemed concentrations' in domestic wastewater. Excess mass-based prices will also apply to substances not characterised as 'deemed substances' in domestic wastewater as per Essential Water's trade waste policy and limits are subject to Essential Water's approval.
- **Non-compliant mass-based prices** ($/kg) for Category 3 customers – which are higher mass-based fees that are applied when a discharger fails to comply with acceptance limits specified in its approval conditions.

Source: IPART analysis and Essential Water, Essential Water Pricing Proposal, June 2021, p 95.

9.1.1 Essential Water is still developing its trade waste pricing framework

While it has a trade waste policy,[174] in our 2019 review we found Essential Water was not recovering the costs of providing trade waste services to its customers.[175] We therefore decided to set its trade waste prices with reference to guideline prices for trade waste issued by DPE (see Box 9.2). This meant that we set most of:

- Essential Water's fixed prices equal to DPE's guideline fixed prices
- Essential Water's variable prices on a transition path that gradually increases them to DPE's guideline variable prices.

We consider that Essential Water should levy its trade waste prices on all trade waste customers. We also consider that Essential Water should consult customers to better understand the impacts of these prices on them and inform its proposed trade waste prices at its next price review.[176] We set a transition period for variable prices to minimise bill shock, while allowing Essential Water time to collect data to establish the efficient cost of providing its trade waste services.[177]

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In its pricing proposal, Essential Water indicated it had not applied these trade waste prices to most customers. Further, it was unable to undertake a detailed review of trade waste costs and flows. This was due to several factors, including:

- Economic conditions in the Broken Hill area becoming more tenuous due to the COVID-19 pandemic
- Essential Water's workforce having to respond to other operational priorities
- Trade waste prices being relatively complex and costly to administer for a small water utility.[178]

It therefore proposed generally keeping in place the trade waste prices and transition paths from the 2019 review.

Essential Water has developed an implementation plan and are currently engaging with potential trade waste customers about how trade waste prices will be introduced. Essential Water's customer base largely consists of Category 1, Category 1a and Category 2 customers. Essential Water indicates that there are no Category 3 customers in Broken Hill. Our decisions provide Essential Water the ability to charge Category 3 customers in accordance with DPE's requirements if any were to develop over the 2022 determination period.

Essential Water has told IPART that it plans to implement trade waste prices in January 2023.

Box 9.2 DPE's guideline prices

DPE has developed the Liquid Trade Waste Management Guidelines for local governments and water utilities to implement. Sound regulation and pricing of wastewater and liquid trade waste is a key component of the NSW Government's *Best-Practice Management of Water Supply and Sewerage Guidelines*.

DPE sets guideline prices for liquid trade waste and mass-based prices. Councils or regulated water utilities may adopt DPE's guideline prices. Alternatively, they may develop trade waste prices based on the principle of achieving full cost-recovery.

Department of Planning and Environment, Recommended Liquid Trade Waste Fees and Charges 2021, p 1.

9.1.2 Increasing the fixed trade waste prices for inflation only

Our decision is:

33. To hold the current fixed trade waste prices constant (before inflation) over the 2022 determination period, as set out in Table 9.1. This means they would increase by the rate of inflation only.

Table 9.1 sets out our decision on Essential Water's fixed trade waste prices, before inflation. We have accepted its proposal to hold all fixed trade waste prices constant (before inflation) over the 2022 determination period.[179] This means they would increase by the rate of inflation only.

In response to our Draft Report, Essential Water accepted our decision to hold fixed trade waste prices constant over the 2022 determination period.[180]

Table 9.1 Decision on fixed trade waste prices $/year ($2021-22) – without inflation

	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26 (%)
One-off fees						
Application fee	248.00	248.00	248.00	248.00	248.00	0%
Re-inspection fee[a]	92.08	92.08	92.08	92.08	92.08	0%
Food waste disposal fee (per bed. per eligible facility)	31.39	31.39	31.39	31.39	31.39	0%
Annual fees[b]						
Category 1 Trade Waste Discharge	100.46	100.46	100.46	100.46	100.46	0%
Category 1a Trade Waste Discharge	100.46	100.46	100.46	100.46	100.46	0%
Category 2 Trade Waste Discharge	201.96	201.96	201.96	201.96	201.96	0%
Category 3 Trade Waste Discharge	676.00	676.00	676.00	676.00	676.00	0%
Per operating mine	1,683.71	1,683.71	1,683.71	1,683.71	1,683.71	0%

Source: IPART analysis, Essential Water, Essential Water Pricing Proposal, June 2021, p 98.

We adjust Essential Water's prices each year for inflation. Table 9.2 shows our fixed trade waste prices for Essential Water that will apply in 2022-23, including inflation of 5.1%

[a] Where more than one inspection is undertaken in a financial year or the cost of inspections is not included in the annual fee.
[b] The cost of one inspection is included in the annual fee – in particular for Category 1, Category 1a and Category 2 customers.

Table 9.2 Fixed trade waste prices $/year ($2022-23) – with inflation

	2022-23	Change from current to 2022-23
One-off fees		
Application fee	260.65	5.1%
Re-inspection fee	96.78	5.1%
Food waste disposal fee (per bed. per eligible facility)	32.99	5.1%
Annual fees		
Category 1 Trade Waste Discharge	105.58	5.1%
Category 1a Trade Waste Discharge	105.58	5.1%
Category 2 Trade Waste Discharge	212.26	5.1%
Category 3 Trade Waste Discharge	710.48	5.1%
Per operating mine	1,769.58	5.1%

Source: IPART analysis

9.1.3 Continue transitioning volume-based trade waste prices over time

Our decisions are:

34. To set volume-based prices for Category 2 customers that continue on the price transition path set in our 2019 review.

35. To set non-compliant volume-based prices for Category 1, Category 1a and Category 2 customers that continue on the price transition path set in our 2019 review.

36. To remove volume-based prices for compliant Category 1 and Category 1a customers, as these customers are low risk and have a low impact on Essential Water's wastewater system.

As set out in Table 9.3, we have accepted Essential Water's proposal to:

- Set volume-based prices that continue on the price transition path set in our 2019 review.[181] This means they will continue to increase towards DPE's volume-based guideline prices over 10 years.
- Remove volume-based prices for 'compliant' Category 1 and Category 1a customers. We agree with Essential Water's position that it is administratively inefficient to apply volume-based prices to these customers, since they are low risk and have a low impact on Essential Water's wastewater system. Further, removing these charging categories will ensure consistency with DPE's guidelines and Essential Water's trade waste policy.[182]

Essential Water accepted our draft decision to continue transitioning volume-based trade waste prices for Category 2 customers, non-compliant volume-based prices for Category 1, Category 1A and Category 2 customers and remove compliant volume-based prices for compliant Category 1 and Category 1A customers.[183]

Table 9.3 Decision on volume-based trade waste prices, $/kL ($2021-22) – without inflation

	2021-22 (current)	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26 (%)
Volume-based prices						
Category 2	0.57	0.75	0.94	1.13	1.32	132%
Non-compliant volume-based prices						
Category 1	0.64	0.75	0.94	1.13	1.32	106%
Category 1a	0.64	0.75	0.94	1.13	1.32	106%
Category 2	5.91	6.91	8.63	10.36	12.09	105%

Source: IPART analysis, Essential Water, Essential Water Pricing Proposal, June 2021, p 99.

Our decisions in the 2019 review mean;

- Volume-based prices for Category 2 customers and non-compliant volume-based prices for Category 1 and Category 1a customers are increasing by around $0.19 per year over 10 years to align with DPE's guideline prices.
- Non-compliant usage prices for Category 2 customers are increasing by around $1.73 per year over 10 years to align with DPE's guideline prices.

After 4 years, Essential Water's trade waste customers would be paying volume-based prices that are around 70% of DPE's guideline prices.

Table 9.4 shows our volume-based prices for Essential Water that will apply in 2022-23, including inflation of 5.1%.

Table 9.4 Volume-based trade waste prices ($2022-23) - with inflation

	2022-23	Change from current to 2022-23
Volume-based prices		
Category 2	0.79	23.4%
Non-compliant volume-based prices		
Category 1	0.79	38.6%
Category 1a	0.79	38.6%
Category 2	7.26	22.8%

Source; IPART analysis

9.1.4 Continue transitioning mass-based trade waste prices over time

Our decision is:

37. To set mass-based prices for Category 3 customers that either:
    - continue on the price transition path set in our 2019 review, or
    - where DPE has revised its guideline prices for a specific substance, transition mass-based prices for that substance to DPE's 2021 guideline price.

38. To set non-compliant mass-based prices for Category 3 customers as per Essential Water's Liquid Trade Waste Policy for:
    - BOD5 where the discharger fails to comply with acceptance limits
    - pH where the discharger is outside of the approved range, and
    - All other substances where the discharger fails to comply with acceptance limits

Our decision is to set mass-based prices that either continue on the price transition path set out in our 2019 review or transition substances to the prices included in DPE's 2021 guidelines (as applicable).[184] This means they will generally continue to increase towards DPE's mass-based guideline prices over the 10-year period from 2019. A full list of substances and prices can be found in our 2022 Determination.

Essential Water proposed removing mass-based prices for Category 3 customers, because it had not conducted enough research into their discharges when it submitted its proposal.[185] Instead, it proposed we set volume-based prices for Category 3 customers. This would allow it more time to collect the necessary information to be able to implement mass-based prices at the next price determination.[186]

Essential Water supported our approach to setting mass-based prices.[187]

Setting mass-based prices for high risk, Category 3 customers is consistent with both Essential Water's trade waste policy and DPE's guidelines. Further, the NSW Government's *Best-Practice Management of Water Supply and Sewerage Guidelines* indicate that mass-based prices are an essential outcome for achieving best practice wastewater management.[188]

As we noted in our 2019 review, since setting volume-based prices for Category 3 customers is inconsistent with Essential Water's trade waste policy (which has been approved by DPE), this could pose problems for it implementing the policy.[189] Therefore, we are retaining mass-based prices for these customers and setting them on the transition path outlined in Box 9.5.

Box 9.3 Price transition path for mass-based prices

- In our 2019 review, we set mass-based prices for around 40 substances to transition them to DPE's then guideline prices over a 10-year period. As with the other trade waste prices, we used DPE's guideline prices as a transition target because Essential Water had not yet developed prices specific to the Broken Hill region.
- In 2021, DPE released updated guideline prices. Several of them were unchanged from its 2019 guideline prices. However, others were revised to reflect changes in a substance's risk profile. Further, DPE no longer outlined guideline prices for some substances.
- In response to these changes, we have adopted the following approach:
  - Where substances are listed in DPE's 2021 guideline prices: either continue to transition them on the price path set in our 2019 review, or where DPE has revised the guideline price, adjust the 10-year transition path to this new price.
  - Where substances are no longer listed in DPE's 2021 guideline prices: continue to transition them on the price path set in our 2019 review. These substances are still referred to in Essential Water's trade waste policy, so it is appropriate we continue to set a price for them.

9.1.5 Continue excluding forecast trade waste revenue from the notional revenue requirement

Our decision is:

39. To subtract $395,000 per year from Essential Water's wastewater notional revenue requirement. This represents our forecast of the revenue Essential Water would recover from trade waste customers if it were charging trade waste prices that align with DPE's guideline prices.

We recommend:

6. Consistent with Recommendation 2, that the NSW Government fund the cost of transitioning trade waste prices over time. That is, the difference between the revenue Essential Water would recover under DPE's guideline prices and the revenue under the transitional prices set in the 2022 Determination.

We have made a decision to subtract $395,000 per year from Essential Water's wastewater notional revenue requirement, before setting wastewater prices for wastewater customers. This represents our forecast of the revenue Essential Water would recover from trade waste customers if it were charging trade waste prices that align with DPE's guideline prices. It is our best available estimate of the costs of supplying trade waste services to these customers. This decision is consistent with our approach in 2019.[190]

We also recommend the difference between the full revenue ($395,000 per year) that Essential Water would recover under DPE's guideline prices and the revenue Essential Water is expected to recover under our transitioned prices is funded by a NSW Government subsidy (see Table 9.5). This means the cost of transitioning trade waste prices would not be borne by Essential Water or its other customers. Again, this recommendation is consistent with our approach in 2019.[191]

Table 9.5 Trade waste subsidy over the 2022 determination period ($'000, $2021-22)

	2022-23	2023-24	2024-25	2025-26	Total
Estimated full revenue from trade waste charges	395.0	395.0	395.0	395.0	1,580.0
Trade waste revenue excluding NSW Government subsidy	194.7	228.2	261.8	295.3	980.0
Required NSW Government trade waste customer subsidy	200.3	166.8	133.2	99.7	600.0

Source: IPART analysis.

In its proposal, Essential Water indicated it plans to engage more with its customers over the 2022 determination period and conduct sampling of discharges to better assess the costs imposed on its wastewater system.[192] We encourage Essential Water to continue with this customer engagement, so it can better understand the costs of treating trade waste in the Broken Hill region and propose prices at the next determination to recover these costs.

In response to our Draft Report, Essential Water accepted our decision to subtract $395,000 per year from Essential Water's wastewater notional revenue requirement.[193] Essential Water also accepted our recommendation that the NSW Government continue to fund the cost of transitioning trade waste prices over time.[194]

9.2 We are holding miscellaneous prices constant

Our decision is:

40. To hold the current miscellaneous prices constant (before inflation) over the 2022 determination period. This means it would increase by the rate of inflation only.

Our decision is to accept Essential Water's proposal and hold the current miscellaneous prices constant (before inflation) over the 2022 determination period. This means they would increase by the rate of inflation only.

Essential Water provides a range of miscellaneous services to its water and wastewater customers, generally for one-off services such as connections and disconnections, replacing damaged services, plumbing inspections, site inspections and building plan approvals.[195] These prices are levied on a relatively small number of customers, when the service is provided. Essential Water has historically recovered most of its miscellaneous prices revenue from 3 charges:

- conveyancing certificates with meter reads
- drainage diagrams, and
- personal service of final warning notice for late payment prior to restriction.[196]

Essential Water proposed keeping miscellaneous prices constant in the 2022 determination period. It considered there had been no change since the 2019 review to indicate a need for revision.[197]

In 2019, IPART's consultant, MJA, assessed Essential Water's miscellaneous prices. MJA found that Essential Water's proposed prices were efficient and did not recommend any changes to prices in 2019.[198] We consider Essential Water's current proposal reasonable considering miscellaneous prices were reviewed last determination period and there has been no material change since the 2019 review.

Essential Water's total recovered revenue from miscellaneous prices is approximately $60,000 per year. Essential Water's current schedule of miscellaneous prices is listed in our 2022 Determination.

Essential Water accepted our draft decision to hold miscellaneous prices constant over the 2022 determination period.[199]

9.3 We have continued to not set recycled water prices

Our decisions are:

41. To continue not setting recycled water prices.

42. To deduct 50% of the revenue received from recycled water sales from Essential Water's notional revenue requirement for regulated services.

We have made a decision to accept Essential Water's proposal and continue not setting recycled water prices, as well as deducting 50% of the revenue from recycled water sales from the Essential Water's notional revenue requirement for regulated services.[200]

Essential Water supply recycled water (or effluent water) to a small number of customers for non-potable uses, following treatment of wastewater.

In 2019 IPART undertook a review of pricing arrangements for recycled water and other services. In its review, IPART changed the regulatory framework for utilities for recycled water services and encouraged unregulated pricing agreements for utilities to charge for recycled water in most settings.[201]

Essential Water proposed to retain its approach of entering into voluntary unregulated pricing agreements with recycled water customers. Essential Water proposed continuing the practice of deducting 50% of the revenue received from recycled water sales from the NRR for regulated services.[202] The purpose is to share the non-regulated revenue evenly between Essential Water and the broader customer base.

Essential Water's proposal to keep unregulated pricing agreements for recycled water services is in line with IPART's regulatory principles. We also accept Essential Water's proposal to continue to deduct 50% of the revenue received from recycled water sales from the NRR for regulated services.

Essential Water supported our draft decision to continue not setting recycled water prices and to deduct 50% of the revenue received from recycled water sales from its notional revenue requirement.[203]

9.4 We are maintaining the current price structures for unmetered properties and unconnected properties

Our decision is:

43. To accept Essential Water's proposal to maintain the current price structures for unmetered properties and unconnected properties.

We have made a decision to accept Essential Water's proposal and maintain the current price structures for unmetered properties and unconnected properties in the 2022 determination period.[204]

In response to our Draft Report, Essential Water accepted our decision to maintain the current price structures for these properties.[205]

9.4.1 We have maintained the current price structure for unmetered properties

In its proposal, Essential Water stated the average level of residential water consumption over the 2019 determination period was approximately 250 kL per year.[206] Similar to IPART's 2019 Determination, Essential Water considered it appropriate to maintain a deemed consumption amount of 300 kL per year for unmetered properties. Therefore, Essential Water proposed to maintain the current price structure set in 2019.

Consistent with our pricing principles, unmetered residential and non-residential properties should pay the standard residential water and wastewater service price,[c] plus a deemed level of water consumption. As the average level of residential water consumption has remained constant at around 260 kL per year, our decision is to maintain the deemed consumption amount at 300 kL per year for unmetered properties. By setting the deemed consumption amount higher, this may provide an incentive for small water users to have a meter installed. Furthermore, this approach is consistent with the approach we apply for other utilities we regulate.[d]

Our decision continues this current price structure for unmetered properties.

9.4.2 We are not setting prices for unconnected properties

We have made a decision to accept Essential Water's proposal to continue not setting prices for unconnected properties.[207]

Essential Water may levy water and wastewater service prices to unconnected properties under the *Water Management Act 2000,* as long as, in the utility's opinion, it is reasonably practicable for water and wastewater services to be provided to that land.[208]

We maintain the same position set in 2019, that unconnected properties should not be charged any water or wastewater fees.[209] Therefore, our decision is to accept Essential Water's proposal.

In 2019, IPART decided to set the water and wastewater prices to zero for unconnected properties. While Essential Water was able to charge unconnected properties, IPART understood that in practice it was very difficult to recover these charges, especially when owners cannot be traced. This created additional expenses for Essential Water to pursue debt recovery. Therefore, it was pragmatic to set the water and wastewater prices to zero because:[210]

- unconnected properties were not directly imposing costs on Essential Water's network, and
- properties that have been disconnected due to non-payment of fees should not continue to be levied water or wastewater charges.

[c] The standard residential wastewater service price includes a deemed discharge allowance of 100 kL per year.
[d] For example, our Sydney Water and Hunter Water reviews (see IPART, Review of prices for Hunter Water Corporation, June 2016, p 143; IPART, Review of prices for Sydney Water Corporation, June 2016, pp. 177-178).

Chapter 10

Customer bill impacts of our pricing decisions

10

Summary of bill impacts on customers

Bills would be stable for residential, non-residential and mining customers

Our decisions to hold prices constant means bills would generally be stable for residential, non-residential and mining customers over 4 years, before inflation.

Bills would increase for EW Pipeline customers receiving untreated water and chlorinated water customers

Over 4 years, water bills for EW Pipeline customers would increase by around 3.3% a year on average,[a] while chlorinated water customer bills would increase by around 2.4% a year on average[b] (in each case before inflation).

Bill impacts are reasonable

As bills are remining stable, we consider they are affordable for residential customers in Broken Hill. Under our prices, typical water and wastewater bills would continue to represent about 2.5% of the median household income in Broken Hill.

This chapter outlines the bill impacts of our decisions for Essential Water's customers. We have forecast bills using the prices set out in Chapters 7 to 9.

10.1 Bills would be stable for residential customers receiving treated water

Our analysis shows that – before inflation – a typical household consuming 300 kL per year of treated water would see its annual bill remain stable over the determination period (see Table 10.1). This is due to our decisions to hold water and wastewater prices constant for 4 years.

Table 10.1 Forecast bills for residential customers receiving treated water ($2021-22) – without inflation

	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26
Residential – non-pensioner						
Small household – 200 kL per year	1,265	1,265	1,265	1,265	1,265	0.0%
Typical household – 300 kL per year	1,453	1,453	1,453	1,453	1,453	0.0%
Large household – 400 kL per year	1,641	1,641	1,641	1,641	1,641	0.0%
Residential – pensioner[a]						

[a] The water bill estimate is for an EW Pipeline customer with a 20mm meter and 250kL per year water usage.
[b] The water bill estimate is for a chlorinated water customer with 300kL per year water usage.

	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26
Small household – 200 kL per year	1,090	1,099	1,103	1,107	1,111	1.9%
Typical household – 300 kL per year	1,278	1,287	1,291	1,295	1,299	1.6%
Large household – 400 kL per year	1,466	1,475	1,479	1,483	1,487	1.4%

a. Pensioners will see their bills increase slightly more, as a percentage, compared to other residential customers. This is because the pensioner rebate of $175 per year (for water and wastewater) is fixed in nominal terms and not indexed in line with inflation. In other words, while prices increase each year in line with inflation the rebate stays the same and the 'real' value of the rebate falls relative to prices. We have assumed an inflation rate of 2.5% from 2023-24. The rebate is provided by Essential Water and funded by the NSW Government.

Source: IPART analysis.

Taking inflation of 5.1% into account, a typical residential customer consuming 300 kL of water per year would pay an annual bill of $1,527 under our prices in 2022-23 (see

Table 10.2). This is $40 lower than the annual bill under Essential Water's proposed prices.

$1,527

IPART's decision

$1,567

Essential Water's proposal

Table 10.2 Residential customers bills for treated water ($2022-23) – with inflation

	kL per year	2022-23	Change from current to 2022-23
Residential – non-pensioner			
Small household	200	1,330	5.1%
Typical household	300	1,527	5.1%
Large household	400	1,725	5.1%
Residential – pensioner[a]			
Small household	200	1,155	5.9%
Typical household	300	1,352	5.8%
Large household	400	1,550	5.7%

a. Pensioners will see their bills increase slightly more, as a percentage, compared to other residential customers. This is because the pensioner rebate of $175 per year (for water and wastewater) is fixed in nominal terms and not indexed in line with inflation. In other words, while prices increase each year in line with inflation the rebate stays the same and the 'real' value of the rebate falls relative to prices. We have assumed an inflation rate of 2.5% from 2023-24. The rebate is provided by Essential Water and funded by the NSW Government.

Source: IPART analysis.

10.2 Bills would increase for residential customers receiving chlorinated water

A typical household consuming 300 kL per year of chlorinated water would see its bills increase by around 2.4% a year on average (see Table 10.3). This is due to our decision, discussed in Chapter 7, to continue transitioning the chlorinated water usage price towards the untreated water usage price.

Table 10.3 Forecast bills for residential customers receiving chlorinated water ($2021-22) – without inflation

	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26	Average annual change
Small household – 200 kL per year	623	635	648	660	673	8.0%	1.9%
Typical household – 300 kL per year	763	782	800	819	838	9.8%	2.4%
Large household – 400 kL per year	903	928	953	978	1,003	11.1%	2.7%

Note: This bill only relates to chlorinated water. It does not include wastewater.
Source: IPART analysis.

Taking inflation of 5.1% into account, a typical chlorinated water customer consuming 300 kL of chlorinated water per year would pay an annual bill of $822 under our prices in 2022-23 (see Table 10.4). This is $12 lower than the annual bill under Essential Water's proposed prices.

$822

IPART's decision

$834

Essential Water's proposal

Table 10.4 Residential customer bills for chlorinated water ($2022-23) – with inflation

	kL per year	2022-23	Change from current to 2022-23 (%)
Small household	200	668	7.2%
Typical household	300	822	7.7%
Large household	400	975	8.0%

Note: This bill only relates to chlorinated water. It does not include wastewater.
Source: IPART analysis.

10.3 Bills would be stable for non-residential customers

Non-residential customer bill impacts will depend on their meter size and discharge factors, as well as their water usage.

Under our prices, treated and untreated water bills for businesses would be stable over the determination period, before inflation (see Table 10.5). This is due to our decisions to hold water and wastewater prices constant for 4 years. For example, a non-residential customer on a 20mm meter using 250 kL per year of treated water would see bills remain constant for the next 4 years before inflation.

Table 10.5 Forecast bills for non-residential customers ($2021-22) – without inflation

	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26
Non-residential - treated water						
20 mm with 250kL usage	1,473	1,473	1,473	1,473	1,473	0.0%
25 mm with 1,000kL usage	4,019	4,019	4,019	4,019	4,019	0.0%
40 mm with 2,100kL usage	8,992	8,992	8,992	8,992	8,992	0.0%
80 mm with 21,000kL usage	71,477	71,477	71,477	71,477	71,477	0.0%
Non-residential - untreated water (water only, no wastewater)						
20 mm with 250kL usage	755	755	755	755	755	0.0%
25 mm with 1,000kL usage	2,186	2,186	2,186	2,186	2,186	0.0%
40 mm with 2,100kL usage	4,837	4,837	4,837	4,837	4,837	0.0%
80 mm with 21,000kL usage	40,136	40,136	40,136	40,136	40,136	0.0%

Note: Wastewater service prices for non-residential customers are based on water meter size. The applicable meter price is set using the formula: (meter size)2 x 20mm meter price / 400. We have calculated service prices for larger meter sizes using this formula, based on Essential Water's stated 20mm price. We have estimated bills using a standard discharge factor of 70% discharge factor, as indicated in Essential Water's pricing proposal (p 104). Actual bills will depend on discharge factors for individual customers.

Source: IPART analysis.

Taking inflation of 5.1% into account, a typical non-residential customer consuming 250 kL of treated water per year would pay an annual bill of $1,548 under our prices in 2022-23 (see Table 10.6). This is $27 lower than the annual bill under Essential Water's proposed prices.

$1,548

IPART's decision

$1,575

Essential Water's proposal

Table 10.6 Non-residential treated and untreated water bills ($2022-23) – with inflation

	2022-23	Change from current to 2022-23
Non-residential - treated water		
20 mm with 250kL usage	1,548	5.1%
25 mm with 1,000kL usage	4,224	5.1%
40 mm with 2,100kL usage	9,451	5.1%
80 mm with 21,000kL usage	75,122	5.1%
Non-residential - untreated water (water only, no wastewater)		
20 mm with 250kL usage	794	5.1%
25 mm with 1,000kL usage	2,297	5.1%
40 mm with 2,100kL usage	5,083	5.1%
80 mm with 21,000kL usage	42,183	5.1%

Note: Wastewater service prices for non-residential customers are based on water meter size. The applicable meter price is set using the formula: (meter size)2 x 20mm meter price / 400. We have calculated service prices for larger meter sizes using this formula, based on Essential Water's stated 20mm price. We have estimated bills using a standard discharge factor of 70% discharge factor, as indicated in Essential Water's pricing proposal (p 104). Actual bills will depend on discharge factors for individual customers.

Source: IPART analysis.

10.4 Bills would increase for EW Pipeline customers receiving untreated water

Under our prices, bills for EW Pipeline customers would increase (see Table 10.7). This is due to our decision, discussed in Chapter 7, to continue transitioning the untreated water usage price for EW Pipeline customers towards a single untreated water usage price. Our analysis shows that an EW Pipeline customer on a 20mm connection consuming 250 kL per year of untreated water would see its bills increase by around 3.3% a year on average, before inflation.

Table 10.7 Forecast bills for EW Pipeline customers receiving untreated water ($2021-22) – without inflation

	2021-22 current	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26	Average annual change
20 mm with 250kL usage	608	629	650	671	692	13.9%	3.3%
25 mm with 1000kL usage	1,596	1,680	1,764	1,849	1,933	21.1%	4.9%
40 mm with 2100kL usage	3,598	3,775	3,952	4,129	4,306	19.7%	4.6%

Note: This bill only relates to untreated water for EW Pipeline customers. It does not include wastewater.

Source: IPART analysis.

Taking inflation of 5.1% into account, a typical EW Pipeline customer consuming 250 kL of untreated water per year would pay an annual bill of $661 under our prices in 2022-23 (see Table 10.8). This is $10 lower than the annual bill under Essential Water's proposed prices.

$661

IPART's decision

$671

Essential Water's proposal

Table 10.8 EW Pipeline customer bills ($2022-23) – with inflation

	2022-23	Change from current to 2022-23 (%)
20 mm with 250kL usage	661	8.7%
25 mm with 1000kL usage	1,766	10.7%
40 mm with 2100kL usage	3,967	10.3%

Source: IPART analysis.

10.5 Bill impacts are affordable

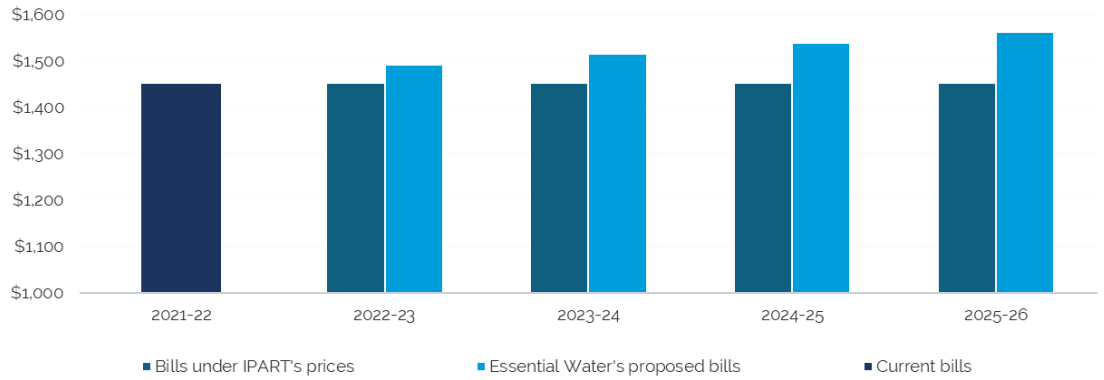
We recognise that affordability of water services is a key concern for Broken Hill customers. We received multiple submissions from Broken Hill community members and stakeholders about affordability concerns with any potential bill increase, especially for those experiencing socio-economic disadvantage.

As bills are remaining stable for most customers, we consider they are affordable for residential customers in Broken Hill. A typical residential customers water bill will remain stable over the determination period, before inflation (see Figure 10.1).[c] Under our prices, typical water and wastewater bills would continue to represent about 2.5% of the median household income in Broken Hill.[d]

[c] Essential Water's proposed prices and bill impacts include an affordability subsidy.

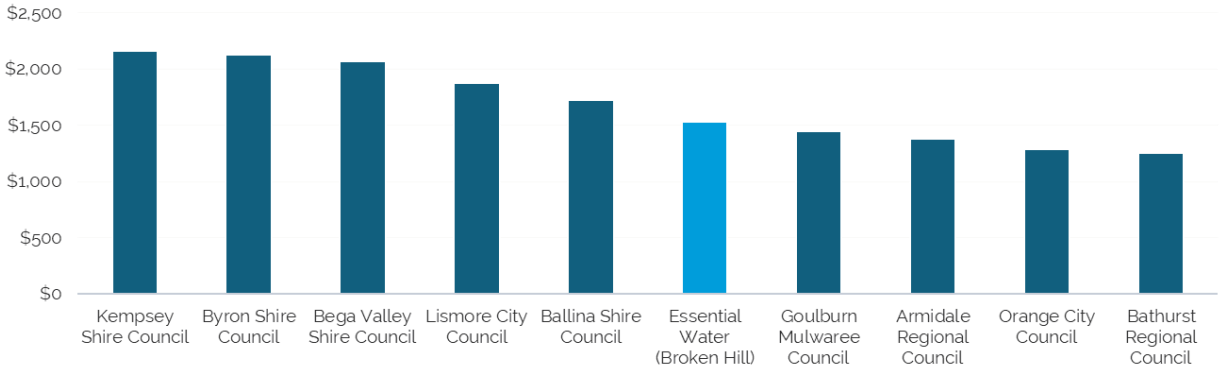
[d] The average annual income in Broken Hill is $61,152 per year. This is based on 2021 ABS Census data and is compared to our draft bills (before inflation) of $1,453 per year for a typical residential household using 300 kL of water per year.

Figure 10.1 A typical residential customer's water bill under our prices, compared to Essential Water's proposed prices ($2021-22) – without inflation



Source: IPART analysis.

Our prices will mean bills are affordable when compared to similar utilities. When compared with similar utilities, typical bills in Broken Hill would still be in the middle range of what households pay in other regional areas (see Figure 10.2).[e] Figure 10.2 Typical residential customer bills for comparable water utilities ($2022-23)



Note: The NSW Government uses data from the Bureau of Meteorology's 2020-21 National Performance Report for urban water utilities to monitor performance across a number of key areas. The data compares the typical annual bills for residential customers for water and wastewater based on the actual year's usage and the prices of the reporting year 2020-21. We have used this data and inflated it to current levels in order to compare the typical water and wastewater bills based on our decisions against similar sized utilities.
Source: IPART analysis and NSW Government Local Water Utility Performance Monitoring data 2020-21.

[e] We compared our bill impacts for a typical Broken Hill customer against typical residential bills for the same water utilities used in Essential Water's proposal (p 28). These nine water utilities are comparable because they service similar customer numbers.

Chapter 11

Implications of pricing decisions

11

Implications of our pricing decisions

Essential Water will be able to meet service standards for Broken Hill

Our decisions will allow Essential Water to achieve both operating and capital efficiency savings. Essential Water will be able to achieve service standards at or above those expected by customers and to meet the standards required by its regulators.

Our decisions will allow Essential Water to remain financeable over the regulatory period

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

We have considered impacts on the Consolidated Fund

We have considered any potential impact on the Consolidated Fund under Section 16 of the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW) (IPART Act).and have factored into our decisions that the NSW Government has confirmed it will continue its existing subsidy of the WaterNSW Pipeline. Any tax implications of the NSW Government contribution is a matter between the NSW Government and Essential Water.

Essential Water can recover all efficient costs in meeting its environmental obligations

In determining Essential Water's revenue requirements, we have ensured it can fully recover all efficient costs it incurs in meetings its environmental obligations. Essential Water has environmental obligations to the NSW Government and has environmental protection programs that place a cost on its business.

There are no impacts on general inflation as a result of our pricing determination

Our decisions have no impact on general inflation because Essential Water has a significantly smaller customer base compared to Sydney Water and prices are generally remaining constant.

11.1 Essential Water will be able to meet service standards for Broken Hill

Under our decisions, we expect Essential Water to achieve both operating and capital efficiency savings and are satisfied that Essential Water can achieve these savings. We consider Essential Water would receive sufficient revenue if it receives all of our recommended NSW Government funding contributions. The NSW Government funding is to help Essential Water achieve service standards at or above those expected by customers and to meet the standards required by its regulators.

Essential Water considered its proposal would permit it to provide services in accordance with regulatory requirements. This was based on its proposed operating and capital expenditure.[211]

Although Essential Water receives a low number of complaints and customers have told us that water quality has improved, its network has a high rate of main breaks and chokes. We consider our decisions on Essential Water's operating and capital costs will enable it to do the infrastructure repairs and upgrades to meet service standards.

While we are accepting most of Essential Water's proposal on capital expenditure, we have applied efficiencies that our views on reasonable timing for Essential Water's capital projects and a reasonable allowance for capitalised corporate overheads in 2021-22.

Our decisions provide an efficient allowance for Essential Water to upgrade and repair ageing infrastructure at an efficient cost in this determination period. As outlined in Chapter 4. key capital expenditure projects that will help Essential Water meet service standards are:

- replacing Wills Street WWTP
- water and sewer reticulation repairs and replacements
- Mica Street service reservoir replacement
- Mica Street concrete remediation
- Rocky Hill service reservoir refurbishment and replacement
- non system expenditure on IT, motor vehicles, buildings, fittings, furniture, plant and equipment.

11.2 Our decisions will allow Essential Water to remain financeable over the regulatory period

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

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

To assess Essential Water's financeability over the 2022 determination period, we analysed its forecast financial performance, financial position and cash flows for both the benchmark and actual business. We then forecast financial ratios for the benchmark test and assessed Essential Water's financial ratios against our target ratios. See Box 11.1 for a description of our financeability target ratios.

We conduct financeability tests using 3 steps

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

Step 1: Calculate our standard financial ratios

We have conducted the financeability test using the revenues and costs for Essential Water only (i.e. as opposed to Essential Energy as a whole). This is consistent with our decisions for Essential Water's tax allowance and post-tax WACC parameters.

We assume that Essential Water would recover the full Notional Revenue Requirement (NRR) under our decision for the water and wastewater businesses. The NSW Government has confirmed that it will continue funding the cost of the WaterNSW Pipeline.

While Essential Water is part of a larger consolidated business (Essential Energy), we do not have enough financial information from Essential Energy to conduct a benchmark and actual financeability test on Essential Energy as a consolidated entity. Therefore, we can only conduct a benchmark test on Essential Water as a hypothetical stand-alone entity.

Box 11.1 Our financeability target ratios for the benchmark test

Real Interest Coverage Ratio (RICR) >2.2x

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

Real FFO over Debt >7.0%

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

Net Debt/RAB Gearing ratio <70%

Gearing is a measurement of the entity's financial leverage, which demonstrates the degree to which it is funded by creditors. A higher gearing ratio means a higher-risk capital structure – that is, a higher proportion of assets are funded by debt which, unlike equity, requires fixed interest payments that the business must continue to maintain over time. A gearing ratio above 70% would indicate a relatively high-risk capital structure. In our 2018 review of financeability tests, we placed greater emphasis on the RICR and the FFO over Debt ratios and placed less emphasis on the Gearing ratio. The RICR and FFO over Debt ratios both measure whether the business generates sufficient cash flows to remain financeable. Our view is that focusing on the cash flows of the business is very important in assessing financeability.

Source: IPART, Review of our financeability test, November 2018, p 50.

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

Table 11.1 Financeability test results

	Target ratios	2022-23	2023-24	2024-25	2025-26
Real Interest Coverage Ratio (RICR)					
Benchmark test	>2.2x	4.4x	4.4x	4.5x	4.6x
Does it meet the target?		✓	✓	✓	✓
Real FFO over Debt					
Benchmark test	>7.0%	6.1%	6.2%	6.2%	6.4%
Does it meet the target?		✗	✗	✗	✗
Net Debt / RAB					
Benchmark test	<70%	60%	60%	60%	60%
Does it meet the target?		✓	✓	✓	✓

Source: IPART analysis

Benchmark test – RICR

The benchmark RICR is expected to far exceed the target of 2.2x over the 2022 determination period (the benchmark RICR goes from 4.4 to 4.6 over the period). By consistently exceeding the target, this indicates that Essential Water can very comfortably meet its annual interest expense.

Benchmark test – Real FFO over Debt

The benchmark FFO over debt ratio is forecast to be slightly below the target of 7% over the 2022 determination period. The benchmark FFO over debt ratio is trending upwards over the determination period from 6.1% in 2022-23 to 6.4% in 2024-25. The below target results are largely driven by higher capital expenditure over the determination period as outlined in Chapter 4. We assume this capital expenditure will require more debt funding compared to the 2019 determination period.

The below target result is driven by:

- The FFO[a] is being affected by the current low WACC of 2.8%, which is causing lower returns on assets.
- Our decision to increase Essential Water's capital expenditure, even with some efficiency savings, is placing downward pressure on the benchmark FFO over Debt ratio.
- Essential Water is investing in assets with long economic lives which results in lower depreciation allowances.

These factors have put downward pressure on the benchmark FFO over Debt ratio so that it is below the target ratio throughout the 2022 determination period.

Benchmark test – Net Debt/RAB Gearing ratio

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

Step 3: Conclusion

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

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

[a] In our 2018 Financeability Review, we defined FFO as: FFO = NRR – Operating expenditure – Tax – Changes in Working Capital – Return on Debt (i.e. RAB x cost of debt)

There is significant headroom in the RICR

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

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

The low FFO over Debt ratio is explained by the combined effects of the current low WACC and an asset base with high and increasing average asset life, and which is assumed to be largely debt funded. Essential Water has an asset base of relatively long-lived assets, which means the initial investment in assets is recovered over a relatively long period of time through the depreciation allowance. We have in addition allowed a higher level of expenditure over the 2022 determination period on assets with long economic lives (see Chapter 4). These factors put downward pressure on the FFO over Debt ratio in the short term.

We note the FFO over Debt ratio improves over the determination period.

A transparent and predictable regulatory framework results in revenue predictability

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

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

11.3 We have considered impacts on the Consolidated Fund

Under section 16 of the IPART Act, IPART is required to report on the likely impact to the Consolidated Fund if prices are not increased to the maximum levels permitted. If this is the case, then the level of tax equivalents and dividends paid to the Consolidated Fund will fall. The extent of this fall will depend on NSW Treasury's application of its financial distribution policy and how the change affects after-tax profit.

For example, if the NSW Government does not accept our recommended subsidies to cover the cost of transitioning trade waste, chlorinated and untreated water (EW Pipeline) prices, then they will not impact the Consolidated Fund. If the NSW Government does accept our recommendations, then the Consolidated Fund will be affected. However, because these subsidies are relatively small, we expect any impact to be minimal.

Our financial modelling is based on a tax rate of 30% for pre-tax profit and dividend payments at 70% of after-tax profit. Under our modelling, a $1 decrease in pre-tax profit would result in a loss of revenue to the Consolidated Fund of 49 cents in total, which is 70% of the decrease in after-tax profit of 70 cents.

Our prices for the WaterNSW Pipeline will reduce Essential Water's water transportation costs by about 21%, before inflation. This means the level of the current Government subsidy would also fall by about 21%. The NSW Government has confirmed it will continue to subsidise the cost of the WaterNSW Pipeline over the entire 2022 determination period. [212]

For more information on WaterNSW's Pipeline prices see the Final Report for our review of WaterNSW's Murray to Broken Hill Pipeline prices.

11.4 Essential Water can recover all efficient costs in meeting its environmental obligations

DPE is responsible for determining the risk of negative impacts of Essential Water on the environment, and imposing standards or requirements to address these risks and minimise any impacts.

Essential Water's environment-related programs include:

- Water savings initiatives, including the provision of educational resources to manage water consumption, and active monitoring of high water accounts and customer visits to address water consumption.
- The re-use of partially treated wastewater (effluent water) for non-drinking purposes, which is sold to a range of customers in selected areas of Broken Hill.

In determining Essential Water's revenue requirements, we have ensured it can fully recover all efficient costs it incurs in meetings its environmental obligations.

11.5 There are no significant impacts on general inflation as a result of our pricing determination

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

We have made decisions to hold most of Essential Water's water prices constant. Therefore, our decisions will not put upward pressure on general inflation.

Appendix A

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

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

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

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

a. the cost of providing the services concerned

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

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

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

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

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

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

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

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

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

k. the social impact of the determinations and recommendations

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

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

[a] The IPART Act 1992.

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

Section 15(1)	Report reference
a) Cost of providing the services	Chapters 3 and 4 set out our forecast of the total efficient costs Essential Water will incur to deliver its services (including the WaterNSW Pipeline transportation costs and consequential works). Further detail is provided in Chapters 5 and 6 on other costs, NRR and forecast water sales and demand.
b) Protection of consumers from abuses of monopoly power	We consider our decisions will protect consumers from abuses of monopoly power, as they reflect the efficient costs Essential Water requires to deliver its services. This is addressed throughout the report, particularly in Chapters 7 to 10 where we set out our pricing decisions.
c) Appropriate rate of return and dividends	Chapter 5 outlines that we have allowed a market-based rate of return on debt and equity, and that this will enable a benchmark business an efficient level of dividends to its owner.
d) Effect on general price inflation	Chapter 11 outlines that the impact of our prices on general inflation is negligible.
e) Need for greater efficiency in the supply of services	Chapters 3 and 4 set out our decisions on Essential Water's prudent historical expenditure and efficient forecast expenditure. We have continued to incorporate an on-going efficiency adjustment to its operating expenditure. Further, Chapter 2 discusses our decision to continue to use an efficiency carryover mechanism to encourage Essential Water to identify further efficiencies.
f) Ecologically sustainable development	Chapters 3 and 4 set out Essential Water's historical expenditure and efficient forecast expenditure that allows it to meet all of its regulatory requirements, including its environmental obligations.
g) Impact on borrowing, capital and dividend requirements	Chapters 5 and 11 explain how we have provided Essential Water with an allowance for a return on and of capital, and our assessment of financeability.
h) Impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body	Chapters 3 and 4 determine Essential Water's prudent historical and forecast efficient expenditure, including the efficient costs of any contracted works to deliver its capital expenditure.
i) Need to promote competition	In determining efficient costs, we have been mindful of relevant principles such as competitive neutrality. However, we have also been mindful of the NSW Government's commitment and have recommended a contribution as set out in Chapter 5. This means that our prices recover less than Essential Water's efficient costs and would be below the prices expected to prevail in a competitive market.
j) Considerations of demand management and least cost planning	Chapters 7 and 8 outlines how we have set usage prices with reference to marginal cost to send price signals to consumers about the impact of their demand on Essential Water's supply capacity.
k) Social impact	Chapters 10 and 11 consider the potential impact of our pricing decisions on Essential Water, its customers and the NSW Government (on behalf of the broader community).
l) Standards of quality, reliability and safety	Chapters 3, 4 and 11 detail our assessment of Essential Water's prudent historical and efficient forecast costs so that it can meet the required standards of quality, reliability and safety in delivering its services. Section 11.1 outlines the implications of our decisions on Essential Water's service standards.

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

a. the government agency's economic cost of production
b. past, current or future expenditures in relation to the government monopoly service
c. charges for other monopoly services provided by the government agency
d. economic parameters, such as discount rates, or movements in a general price index (such as CPI), whether past or forecast
e. a rate of return on the assets of the government agency
f. a valuation of the assets of the government agency
g. the need to maintain ecologically sustainable development (within the meaning of section 6 of the Protection of the Environment Administration Act 1991) by appropriate pricing policies that take account of all the feasible options available to protect the environment
h. the need to promote competition in the supply of the service concerned
i. considerations of demand management (including levels of demand) and least cost planning.

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

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

Section 14A(2)	Report reference
a) Government agency's economic cost of production	Chapters 3 and 4 set out Essential Water's total efficient costs to deliver its regulated services over the determination period.
b) Expenditures in relation to the government monopoly service	Chapters 3 and 4 set out our decisions on Essential Water's efficient historical and forecast expenditure.
c) Charges for other monopoly services	Chapter 9 sets out our decisions on Essential Water's prices for other monopoly services.
d) Economic parameters, such as discount rates, or movements in CPI	Chapter 5 sets out how we have indexed Essential Water's regulatory asset base to account for inflation. Chapters 7, 8 and 9 explains how we have set prices to raise revenue that recovers efficient costs over the determination period in net present value terms.
e) Rate of return on the assets of the government agency	Chapter 5 outlines that we have allowed a market-based rate of return on debt and equity which would enable a benchmark business to return an efficient level of dividends.
f) Valuation of the assets	Chapter 5 sets out the value of Essential Water's assets on which we consider it should earn a return on capital and an allowance for regulatory depreciation.
g) Ecologically sustainable development	Chapters 3 and 4 set out Essential Water's efficient historical and forecast expenditure that allows it to meet all of its regulatory requirements, including its environmental obligations.
h) Need to promote competition in determining efficient costs,	We have been mindful of relevant principles such as competitive neutrality for example we have included a tax allowance for Essential Water as set out in Chapter 5.

Section 14A(2)		Report reference
i)	Considerations of demand management and least cost planning	Chapters 3 and 4 outline how we have assessed Essential Water's efficient historical and forecast expenditure required to deliver its regulated services at least cost. Chapters 7, 8 and 9 outlines how we have set prices to reflect efficient costs, including the usage price to reflect the approximate estimate of marginal cost of supply – such cost-reflective prices promote the efficient use and distribution of resources (all else being equal).

Appendix B

Essential Water's regulatory framework

B.1 We set maximum prices for water, wastewater and other related services provided by Essential Water

In this review, our role is to regulate the prices Essential Water can charge its customers for water, wastewater, and other water-related services. The goal of this review is to set prices that allow Essential Water to provide services of the quality its customers expect. We also want to ensure that Essential Water charges no more or no less than it needs to.

The way we regulate these prices is by setting the maximum prices Essential Water can charge for each water-related service in each year of the determination period. We discuss our decisions on this matter in Chapter 2 of this paper.

Our role in setting Essential Water's prices is set out by the *Independent Pricing and Regulatory Tribunal Act 1992* (the IPART Act). The IPART Act also sets out the matters that we must consider in making our pricing decisions to ensure consumers are protected, service standards are maintained, and prices generate enough money to cover the costs of providing services. These matters are set out in Appendix A of this paper.

B.2 We consider a range of requirements for Essential Water when setting prices

A number of regulators oversee Essential Water's water and wastewater functions. Essential Water's primary regulators are listed in Table B.1.

Table B.1 Essential Water's legislative obligations

Regulator	Responsibility
IPART	Sets the maximum prices that Essential Water can charge to its customers for delivering water, wastewater and other water-related activities.
Department Planning and Environment	Administers ministerial approval to construct, extend or modify works for water and wastewater treatment, and for reusing effluent and biosolids. It also oversees the performance of local water utilities and publishes annual performance monitoring data and reports which benchmarks the performance of all NSW water utilities.
Dam Safety Committee	Responsible for formulating measures to ensure the safety of dams and maintaining the surveillance of prescribed dams. This includes those dams under the management of Essential Water.
NSW Health	Responsible for regulating the quality and safety of Essential Water's drinking water, consistent with the *Australian Drinking Water Guidelines 2011*.
NSW Environment Protection Authority (EPA)	Responsible for licencing and monitoring the wastewater discharges from Essential Water's wastewater system under the *Protection of the Environment Operation Act 1997*.
Natural Resource Access Regulator	Responsible for compliance and enforcement of natural resources management legislation. Essential Water's water licence limits its extraction of water from surface and groundwater sources under the *Water Management Act 2000* and the *Water Act 1912*.

Appendix C

Essential Water' services and operations

Essential Water is an operating division of Essential Energy,[213] which is a NSW Government State Owned Corporation responsible for the poles and wires that deliver electricity to 95% of NSW and parts of southern Queensland.[214]

Essential Water provides water, wastewater, trade waste and miscellaneous services to around 18,000 people in Broken Hill, Menindee, Silverton and Sunset Strip.[215] Its water supply functions are set out in the *Water Management Act 2000*.

This appendix provides an overview of Essential Water's services and operations.

C.1 Water supply services

Essential Water supplies water to around 10,500 customers in Broken Hill, Menindee, Silverton and Sunset Strip, as well as rural customers.[216] In doing so, it provides the following water services:

- **Treated water** – also known as drinking water or potable water – to Broken Hill and Menindee.
- **Untreated water** – also known as raw water – to some locations in Broken Hill and Menindee, and to customers along the EW Pipelines (i.e. the Menindee, Stephens Creek and Umberumberka pipelines).
- **Chlorinated water** – which is raw water that has been disinfected but not filtered – to customers in Silverton and Sunset Strip.
- **Recycled water** – wastewater that has been treated before being re-used or discharged to the environment – to a small number of customers for a range of non-potable uses.[217]

C.2 Wastewater services

Essential Water provides wastewater services to around 9,700 properties in the city of Broken Hill.[218] It operates 2 wastewater treatment plants, and after treating, sells some of this water as recycled water. The remainder is discharged to the environment.[219]

C.3 Trade waste and miscellaneous services

Trade waste is the wastewater from commercial and industrial customers in which the concentrations of pollutants exceed the level contained in household wastewater. Essential Water provides trade waste services to non-residential customers in the city of Broken Hill only.

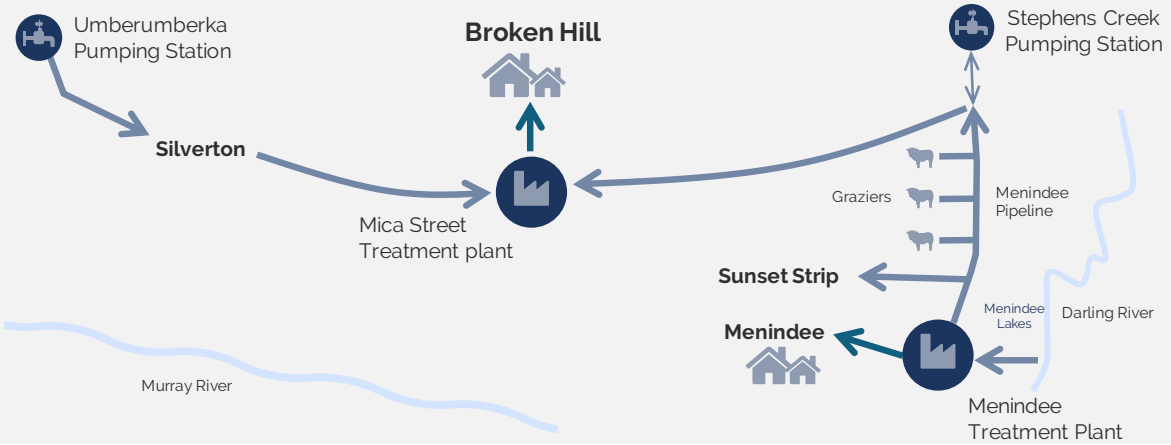
Essential Water also provides a range of miscellaneous services to its water and wastewater customers. These are generally one-off services such as connections and disconnections, replacing damaged services, plumbing inspections, site inspections and building plan approvals. Charges for these miscellaneous services are levied on a small number of customers and are charged on an as-needed basis.

C.4 Essential Water's past operations

Essential Water previously sourced most of its bulk water from the Darling River, using a pipeline from the Menindee Lakes (see Figure C.1).

To supply water to Broken Hill customers, water from Menindee was pumped from its source at the Darling River to the Mica Street water treatment plant in Broken Hill. In addition to the Menindee pipeline, Essential Water also managed other water sources, including Stephens Creek Reservoir and Umberumberka Dam.

Figure C.1 Essential Water's previous water supply network



Note: Map not to scale, for illustrative purposes only.
Source: IPART analysis, based on information provided by Essential Water.

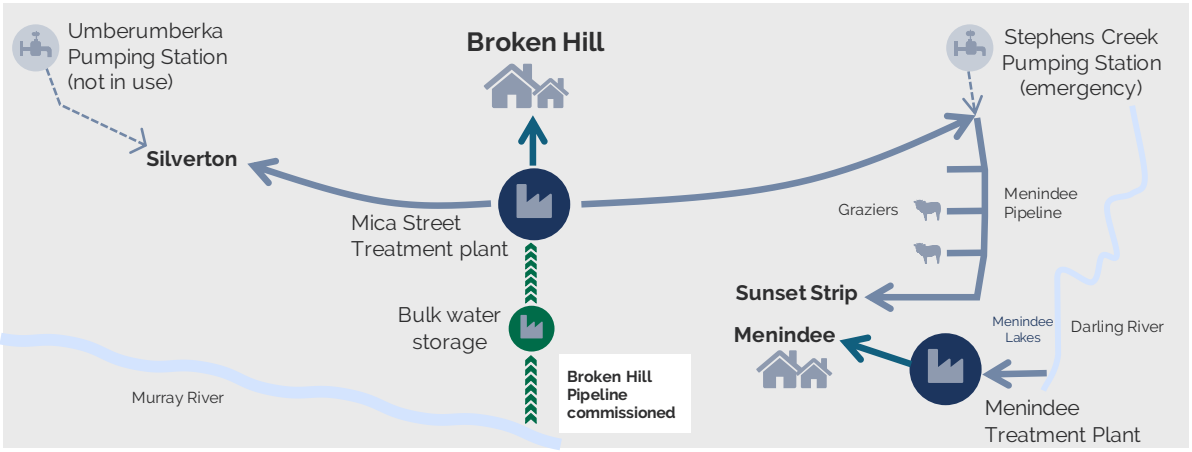
C.5 Essential Water's current operations

Essential Water now sources most of its bulk water from the Murray River. It comes via the WaterNSW Pipeline to its Mica Street water treatment plant in Broken Hill (see Figure C.2).

When the WaterNSW Pipeline became operational during the 2019 determination period, it meant that:

- Treated and untreated water customers in Broken Hill, as well as chlorinated water customers in Silverton and Sunset Strip, began receiving water sourced from the Murray River.
- There was a change in the direction of water flowing through the Menindee, Stephens Creek and Umberumberka pipelines. Customers along these EW Pipelines now source untreated water from the Murray River, rather than the Darling River.
- Customers in Menindee continued receiving water from the Darling River.

Figure C.2 Essential Water's current water supply network



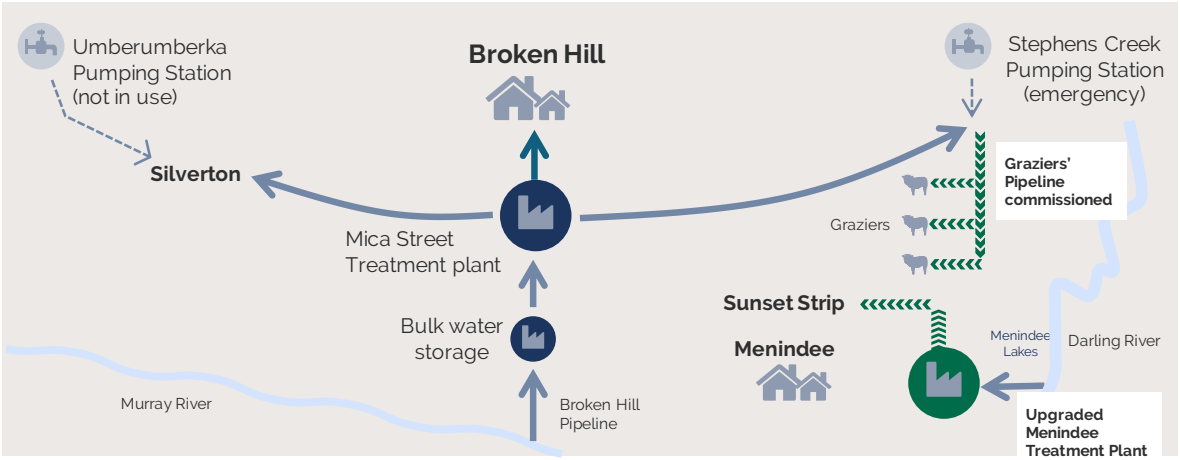
Note: Map not to scale, for illustrative purposes only.
Source: IPART analysis, based on information provided by Essential Water.

C.6 Essential Water's proposed operations

Essential Water's pricing proposal includes 2 main changes to its existing water supply network, which are summarised in Figure C.3. Essential Water has proposed:

- Providing customers in Sunset Strip with treated water sourced from the Darling River from a new water treatment plant in Menindee.
- Constructing a new pipeline (the Graziers' Pipeline) to replace the existing Menindee pipeline to continue providing untreated water to 11 graziers.

Figure C.3 Essential Water's proposed water supply network



Note: Map not to scale, for illustrative purposes only.
Source: IPART analysis, based on information provided by Essential Water.

Appendix D

Weighted average cost of capital

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

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

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

We used our standard methodology to calculate the WACC. Under our approach we estimate one WACC based on current market data and one based on long-term average data. When our uncertainty index, which indicates the level of volatility in capital markets, is within one standard deviation of its mean value, we select the mid-point of the current and long-term WACC values. The uncertainty index was within this range at the time we set the WACC.

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

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

	Step 1 – Market data	
	Current	**Long term**
Nominal risk-free rate	1.7%	2.5%
Inflation	2.6%	2.6%
Implied Debt Margin	2.3%	2.4%
Market Risk premium	8.2%	6.0%
Debt funding	60%	60%
Equity funding	40%	40%
Total funding (debt + equity)	100%	100%
Gamma	0.25	0.25
Corporate tax rate	30%	30%
Effective tax rate for equity	30%	30%
Effective tax rate for debt	30%	30%
Equity beta	0.70	0.70
Cost of equity (nominal post-tax)	7.4%	6.7%
Cost of equity (real post-tax)	4.7%	4.0%
Cost of debt (nominal pre-tax)	4.0%	4.9%
Cost of debt (real pre-tax)	1.4%	2.2%
Nominal vanilla (nominal post-tax) WACC	5.4%	5.6%
Post-tax real WACC	**2.7%**	**2.9%**
Pre-tax nominal WACC	6.2%	6.4%
Pre-tax real WACC point estimate	3.5%	3.7%

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

Source: IPART calculations.

D.2 Our methodology to calculate WACC parameters

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

D.3 Gearing and beta

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

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

D.4 Sampling dates for market observations

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

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

Our inflation forecast was produced using IPART's standard approach, [220] with the Reserve Bank of Australia 1 year ahead forecast sourced from the February 2022 Statement of Monetary Policy.

D.5 Tax rate

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

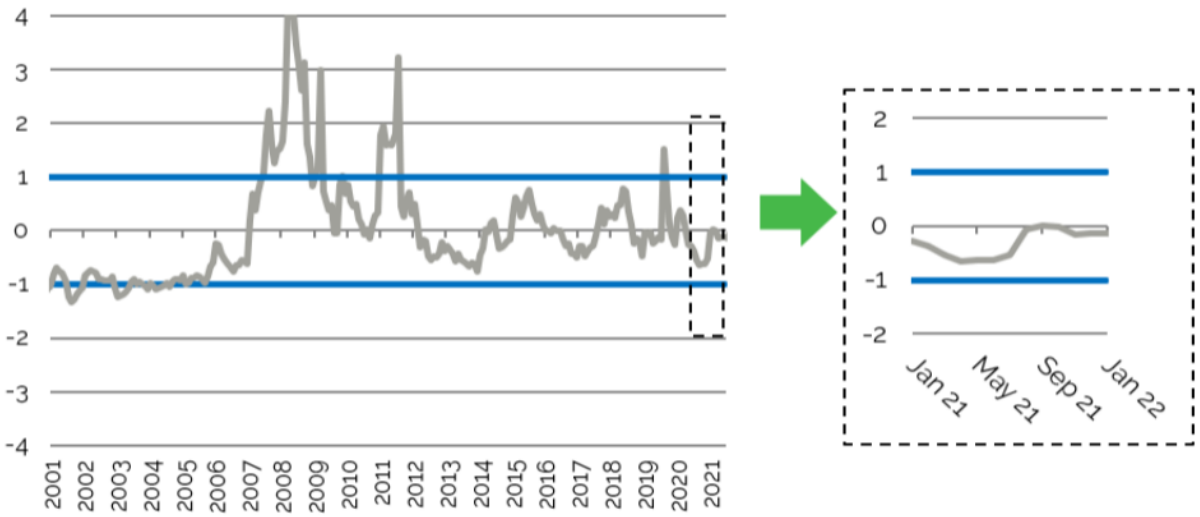
D.6 Application of trailing average method

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

D.7 Uncertainty index

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

Figure D.1 IPART's uncertainty index



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IPART Independent Pricing and Regulatory Tribunal | NSW

Maximum prices for water transportation services supplied by Water NSW for the Murray River to Broken Hill Pipeline

Final Determination

November 2022

Water »

Tribunal Members

The Tribunal members for this review are:

Carmel Donnelly PSM, Chair
Deborah Cope
Sandra Gamble

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

Acknowledgment of Country

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We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

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Contents

Part 1 Preliminary

1 Application of this determination

1.1 This determination applies to the Pipeline Service

Under sections 11 and 13A of the IPART Act, this determination fixes the maximum prices that Water NSW may charge Essential Energy for the Pipeline Service, and sets a methodology for fixing the maximum prices that Water NSW may charge Non-EE Customers for the Pipeline Service.

1.2 Exclusions from this determination

(1) This determination does not apply to a Pipeline Service provided pursuant to a Negotiated Services Agreement

(2) The Suspension Services are not part of the Pipeline Service for the purposes of this determination.

[Note: IPART has deferred the determination of maximum prices for the Suspension Services.]

2 Commencement and term of this determination

(1) This determination commences on the later of:

(a) 1 January 2023; and

(b) the date that it is published in the NSW Government Gazette,

(**Commencement Date**).

(2) The maximum prices under this determination apply from the Commencement Date to 30 June 2026.

(3) The maximum prices under this determination prevailing at 30 June 2026 continue to apply beyond 30 June 2026, until this determination is revoked or replaced.

[Note: For the avoidance of doubt, the effect of clause 2 is that this determination will apply in respect of Pipeline Services supplied on or after the Commencement Date, and the 2019 Determination will apply in respect of Pipeline Services supplied prior to the Commencement Date and within the term of the 2019 Determination.]

3 Replacement of the 2019 Determination

This determination replaces the 2019 Determination.

4 Maximum prices

(1) The maximum price that Water NSW may charge for supplying the Pipeline Service to:

(a) Essential Energy is set out in Part 2.

(b) Non-EE Customers is set out in Part 3.

5 Legislative background

5.1 IPART may determine maximum prices for government monopoly services supplied by specified government agencies

Section 11(1)(a) of the IPART Act provides IPART with a standing reference for the determination of prices for government monopoly services supplied by a government agency specified in Schedule 1 to the IPART Act. Section 13A of the IPART Act provides that in making a pricing determination for a government monopoly service, IPART may either fix a maximum price or set a methodology for fixing a maximum price.

5.2 The Pipeline Service is a government monopoly service

The Pipeline Service is a government monopoly service because it falls within the scope of the Order.

[Note: On 1 January 2015, the State Water Corporation was continued in existence as a corporation constituted by the Water NSW Act but with the new name of Water NSW. References to the former State Water Corporation in the Order are to be read as references to Water NSW, in accordance with clause 24 of Schedule 2 of the Water NSW Act.]

5.3 Water NSW is specified in Schedule 1 to the IPART Act

IPART has a standing reference to set maximum prices for Water NSW because Schedule 1 to the IPART Act specifies Water NSW.

Part 2 Maximum Price for Essential Energy

6 Application of this part

This part sets out the maximum price that Water NSW may levy for supplying the Pipeline Service to Essential Energy.

7 Maximum price

The maximum price that Water NSW may levy for supplying the Pipeline Service to Essential Energy is the amount calculated using the formula in Box 1.

Box 1 Maximum price for Essential Energy

$$MP_{EE} = AC_{EE} + (UR_{EE} \times U_{EE})$$

Where:

MP_{EE} means the maximum price that Water NSW may levy for supplying the Pipeline Service to Essential Energy for the applicable Period;

AC_{EE} means the access charge specified in Table 1 for the applicable Period;

UR_{EE} means the usage rate specified in Table 2 for the applicable Period; and

U_{EE} means the number of kilolitres of water measured by the Meter for the applicable Period.

Tables 1-2

Table 1 Access charge

1 July 2022 to 30 June 2023 ($/day)	1 July 2023 to 30 June 2024 ($/day)	1 July 2024 to 30 June 2025 ($/day)	1 July 2025 to 30 June 2026 ($/day)
53,388.87	53,388.87 x CPI_1	53,388.87 x CPI_2	53,388.87 x CPI_3

Table 2 Usage rate

1 July 2022 to 30 June 2023 ($/kL)	1 July 2023 to 30 June 2024 ($/kL)	1 July 2024 to 30 June 2025 ($/kL)	1 July 2025 to 30 June 2026 ($/kL)
0.52	0.42 x CPI_1	0.37 x CPI_2	0.37 x CPI_3

Part 3 Maximum Price for Non-EE Customers

8 Application of this part

This part sets out the maximum price that Water NSW may levy for supplying the Pipeline Service to Non-EE Customers.

9 Maximum price

The maximum price that Water NSW may levy for supplying the Pipeline Service to a Non-EE Customer is the amount calculated using the formula in Box 2.

Box 2 Maximum prices for Non-EE Customers

$$MP_{NEE} = (AC_{NEE} \times O_{NEE}) + (UR_{NEE} \times U_{NEE})$$

Where:

MP_{NEE} means the maximum price that Water NSW may levy for supplying the Pipeline Service to Non-EE Customers for the applicable Period;

AC_{NEE} means the access charge specified in Table 3 for the applicable Period;

O_{NEE} means the Non-EE Customer's Number of Offtakes;

UR_{NEE} means the usage rate specified in Table 4 for the applicable Period; and

U_{NEE} means the number of kilolitres of water supplied to the Non-EE Customer for the applicable Period.

Tables 3-4

Table 3 Access charge

1 July 2022 to 30 June 2023 ($/day)	1 July 2023 to 30 June 2024 ($/day)	1 July 2024 to 30 June 2025 ($/day)	1 July 2025 to 30 June 2026 ($/day)
17.79	17.79 x CPI_1	17.79 x CPI_2	17.79 x CPI_3

Table 4 Usage rate

1 July 2022 to 30 June 2023 ($/kL)	1 July 2023 to 30 June 2024 ($/kL)	1 July 2024 to 30 June 2025 ($/kL)	1 July 2025 to 30 June 2026 ($/kL)
0.52	0.42 x CPI_1	0.37 x CPI_2	0.37 x CPI_3

Part 4 Statement of reasons for setting methodologies

10 Legislative framework

Under section 13A(2) of the IPART Act, IPART may not choose to make a determination that involves setting the methodology for fixing a maximum price, unless IPART is of the opinion that it is impractical to make a determination directly fixing the maximum price. If IPART makes a determination that involves setting the methodology for fixing a maximum price then it must include in its determination a statement of reasons as to why it chose to set a methodology (see section 13A(3) of the IPART Act).

11 Statement of reasons

IPART has set a methodology for fixing the maximum price for supplying the Pipeline Service to Non-EE Customer. This is because the cost of providing the Pipeline Service to Non-EE Customers depends on the Non-EE Customer's Number of Offtakes. It is impractical to make a determination directly fixing a maximum price for supplying the Pipeline Service to Non-EE Customers because the costs of providing the Pipeline Service through an Offtake varies depending on the Number of Offtakes a customer has.

Part 5 Definitions and interpretation

12 Interpretation

12.1 General provisions

In this determination:

(1) headings are for convenience only and do not affect the interpretation of this determination;

(2) a reference to a part, clause, table or box is a reference to a part of, clause of, table in or box in, this determination unless otherwise indicated;

(3) a construction that would promote a purpose or object expressly or impliedly underlying the IPART Act is to be preferred to a construction that would not promote that purpose or object;

(4) words importing the singular include the plural and vice versa;

(5) a reference to a law or statute includes regulations, rules, codes and other instruments (including licences) under it and consolidations, amendments, re-enactments or replacements of them or of the law or statute itself;

(6) where a word is defined, other grammatical forms of that word have a corresponding meaning;

(7) a reference to a day is to a calendar day;

(8) a reference to a financial year is a reference to a period of 12 months beginning on 1 July and ending on the following 30 June;

(9) a reference to a person includes a reference to the person's executors, administrators, successors, substitutes (including, but not limited to, persons taking by novation), replacements and assigns; and

(10) a reference to a body, whether statutory or not, which ceases to exist; or whose powers or functions are transferred to another body, is a reference to the body which replaces it or which substantially succeeds to its powers or functions.

12.2 Explanatory notes and amendment notices

(1) Explanatory notes do not form part of this determination, but in the case of uncertainty may be relied on for interpretation purposes.

(2) Under section 32 of the IPART Act, IPART may amend this determination to correct a minor, obvious, clerical or administrative error by publishing a notice in the NSW Government Gazette.

12.3 Maximum prices exclusive of GST

(1) Maximum prices specified in this determination do not include GST.

(2) For the avoidance of doubt, where GST is lawfully applied to maximum prices under this determination, the resulting GST inclusive price is consistent with this determination.

12.4 Rounding Rule

(1) Any maximum price calculated in accordance with this determination is to be rounded to the nearest whole cent.

(2) For the purposes of rounding a maximum price under clause 12.4(1), any amount that is a multiple of 0.5 cents (but not a multiple of 1 cent), is to be rounded up to the nearest whole cent.

(3) The CPI multipliers calculated under clause 13.1 are to be rounded to three decimal places before adjusting a maximum price for inflation.

(4) For the purposes of rounding the CPI multipliers under clause 12.4(3), any amount that is a multiple of 0.0005 (but not a multiple of 0.001) is to be rounded up to three decimal places.

12.5 Billing and Meter reading

For the avoidance of doubt, nothing in this determination affects:

(1) when Water NSW may issue a bill to Essential Energy or a Non-EE Customer for prices or charges under this determination; or

(2) when Water NSW must read a Meter.

13 Definitions

13.1 Consumer Price Index

(1) CPI means the consumer price index All Groups index number for the weighted average of eight capital cities, published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by IPART.

(2) The maximum prices in this determination are to be adjusted for inflation by multiplying the specified price by the specified CPI multiplier:

(a) CPI_1;

(b) CPI_2; or

(c) CPI_3.

(3) The CPI multipliers are calculated using the applicable formula in Box 3.

Box 3 Calculation of CPI multipliers

$$CPI_1 = \frac{CPI_{March2023}}{CPI_{March2022}}$$

$$CPI_2 = \frac{CPI_{March2024}}{CPI_{March2022}}$$

$$CPI_3 = \frac{CPI_{March2025}}{CPI_{March2022}}$$

Where:

$CPI_{March2022}$ means CPI for the March quarter of 2022;

$CPI_{March2023}$ means CPI for the March quarter of 2023;

$CPI_{March2024}$ means CPI for the March quarter of 2024; and

$CPI_{March2025}$ means CPI for the March quarter of 2025.

13.2 General definitions

In this determination:

2019 Determination means IPART's determination dated 2019 and titled 'Water NSW prices for water transportation services provided by the Murray River to Broken Hill Pipeline from 1 July 2019', published in New South Wales, Gazette, No 67, 28 June 2019, 2387.

Commencement Date means the commencement date defined in clause 2(1).

CPI means the Consumer Price Index calculated in accordance with clause 13.1.

Essential Energy means the corporation established under section 7 of the *Energy Services Corporations Act 1995* (NSW) and listed in Part 2 of Schedule 1 of that Act as 'Essential Energy'.

GST means the Goods and Services Tax as defined in *A New Tax System (Goods and Services Tax) Act 1999* (Cth).

IPART means the Independent Pricing and Regulatory Tribunal established under the IPART Act.

IPART Act means the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW).

Meter means the meter located at or about the Broken Hill delivery point outside Water NSW's bulk water storage facility.

Multiple-Customer Offtake means an Offtake to which more than one customer has access.

Multiple-Customer Offtake Value means, in respect of a Multiple-Customer Offtake, one divided by the number of customers who have access to that Multiple-Customer Offtake.

[Note: For example, for a Multiple-Customer Offtake to which two customers have access, the Multiple-Customer Offtake Value would be $\frac{1}{2}$.]

Negotiated Services Agreement means a written agreement between Water NSW and a Non-EE Customer, a copy of which is provided to IPART by Water NSW:

(a) under which Water NSW agrees to supply the Pipeline Service to the Non-EE Customer at prices that are not the maximum prices set out in Part 3 of this determination for the Pipeline Service; and

(b) which is entered into after 1 July 2019.

Non-EE Customer means a customer other than Essential Energy.

Number of Offtakes means, in respect of a Non-EE Customer, the sum of:

(a) the total number of Single-Customer Offtakes to which the Non-EE Customer has access; and

(b) the sum of all the Multiple-Customer Offtake Values for each Multiple-Customer Offtake to which the Non-EE Customer has access.

Offtake means an outlet from the Pipeline through which one or more Non-EE Customers may be supplied water from the Pipeline.

Order means the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004* published in New South Wales, *Gazette,* No 144, 10 September 2004, 7520.

Period means, as the case may be:

(a) 1 July 2022 to 30 June 2023;

(b) 1 July 2023 to 30 June 2024;

(c) 1 July 2024 to 30 June 2025; or

(d) 1 July 2025 to 30 June 2026.

Pipeline means the pipeline that:

(a) transports water from the Murray River at Wentworth to Water NSW's bulk water storage facility near Broken Hill; and

(b) is operated by, or on behalf of, Water NSW.

Pipeline Service means the services involved in the supplying of water by means of, or in connection with, the Pipeline to Essential Energy and Non-EE Customers.

Restart Service means the services involved in recommencing the Pipeline Service after a Shutdown Service at Essential Energy's written request.

Shutdown Service means the services involved in suspending the Pipeline Service at Essential Energy's written request.

Single-Customer Offtake means an Offtake to which only one customer has access.

Standby Service means the services involved in making the Pipeline available for the Restart Service.

Suspension Services means the Shutdown Service, the Restart Service and the Standby Service.

Water NSW means the corporation constituted under the Water NSW Act.

Water NSW Act means the *Water NSW Act 2014* (NSW).

IPART Independent Pricing and Regulatory Tribunal | NSW

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

Final Report

November 2022

Water »

Tribunal Members

The Tribunal members for this review are:

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The Independent Pricing and Regulatory Tribunal (IPART)

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

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Contents

1 Water transportation prices to decrease

We have set prices that WaterNSW can charge customers for water transportation services provided by the Murray River to Broken Hill pipeline (the WaterNSW Pipeline). These prices will apply from 1 January 2023 until 30 June 2026 to WaterNSW's 2 customer groups:

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

We last set prices for these services in 2019, shortly after the WaterNSW Pipeline was built. Since then, the WaterNSW Pipeline has secured water supply in the Broken Hill region, which is critical given its arid climate, history of drought and need to manage elevated levels of lead in the environment.

Under our prices over the next 4 years, bills would decrease for Essential Water by around 21% and offtake customers by around 16%, before inflation. To set these prices, we considered the reasonable:

- ongoing costs of running the WaterNSW Pipeline
- financing costs of the WaterNSW Pipeline
- the number of customers who will share these costs and the amount of water the WaterNSW Pipeline is expected to transport for its customers over the next 4 years.

We looked at the money WaterNSW spent over the last 3 years, as well as the money WaterNSW proposes to spend over the next 4 years. Our decision is to accept most of what WaterNSW has proposed, but also to make some adjustments in areas where we think it is achievable for the WaterNSW Pipeline to provide better value for money. We have also decided to set a lower rate of return for the WaterNSW Pipeline, based on our standard approach.

We looked at the volume of water the WaterNSW Pipeline would transport over the next 4 years and found that WaterNSW's expectations are broadly reasonable. This means the WaterNSW Pipeline would be used to meet almost all of the water needs of the Broken Hill region.

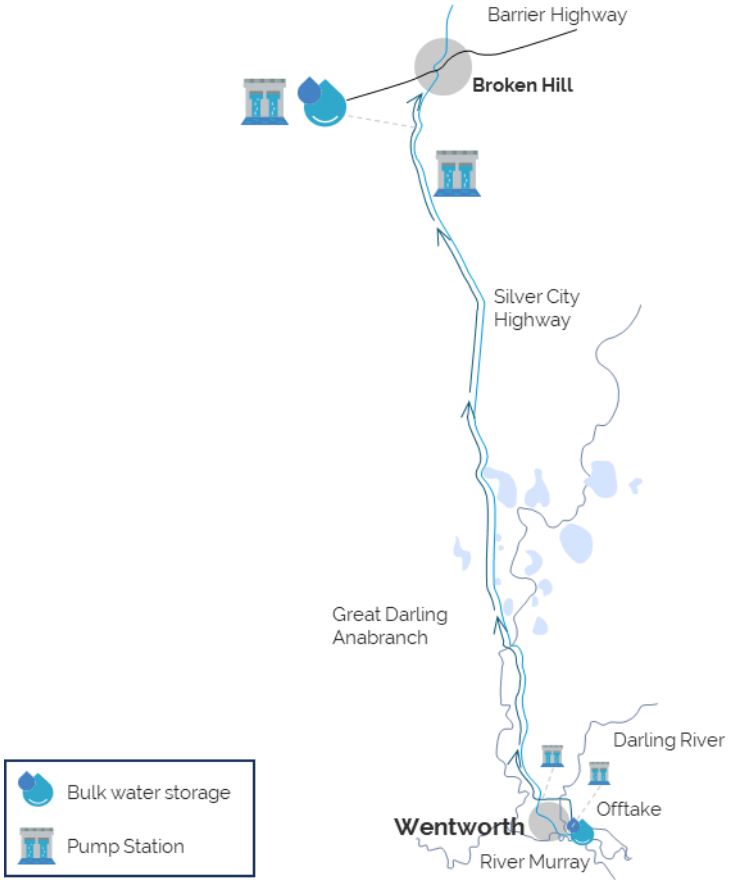
This Final Report provides a summary of our key decisions and customer outcomes. We have prepared a Final Technical Report, which provides full details of our analysis, full list of our decisions and reasons for them.

The scope of our review is limited to the prices that WaterNSW can charge for services provided by the WaterNSW Pipeline. Maximum prices for the bulk water, water management services, and water and wastewater services to customers in Broken Hill are set by IPART under separate reviews. Our review of Essential Water's prices has taken account of the NSW Government's decision to continue to subsidise the costs of the WaterNSW Pipeline.[1]

2 Our decisions on prices and bills

The WaterNSW Pipeline consists of a 270km subterranean pipeline, pumping stations and bulk water storage facility for transporting, storing and delivering bulk water from the Murray River at Wentworth to Broken Hill and surrounding communities (shown below).

Figure 2.1 The WaterNSW Pipeline transports water from the Murray River to Broken Hill



Source: Adapted from Water NSW schematic of the Broken Hill Pipeline, see Pricing proposal by Water NSW – Plain English Summary - June 2021

In 2016 and 2017, the NSW Government directed WaterNSW to construct, operate and maintain the WaterNSW Pipeline. This was to secure the long-term water supply for Essential Water, which provides water and wastewater services in Broken Hill and its surrounds. In addition to transporting water for Essential Water, the WaterNSW Pipeline also transports water to a small number of offtake customers located along the pipeline.

The sections below summarise our decisions on prices for water transportation services provided by the WaterNSW Pipeline.

2.1 Water transportation bills for Essential Water would decrease

We maintained the current price structure of splitting prices between a variable usage price and a fixed access price. Under our decisions, the usage price for Essential Water will increase and the access price will decrease (as shown in Table 2.1). The usage price is increasing because WaterNSW's energy costs have increased, while the access price is decreasing due to WaterNSW's lower financing costs. In Chapter 3 of this Final Report, we discuss our approach to setting costs for the WaterNSW Pipeline over the next 4 years.

Table 2.1 Prices for Essential Water ($2021-22) - without inflation

	2021-22	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26
Usage price, $ per ML	212.52	499.14	403.39	350.46	351.20	65.3%
Access price, $ per day	67,281	50,798	50,798	50,798	50,798	-24.5%

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

Under our decisions, Essential Water's yearly bills to transport water through the WaterNSW Pipeline would decrease by around 21% (before inflation) compared to current bills. Essential Water's bills would then remain mostly stable over the next 3 years (shown in Table 2.2). Prices and bills for Essential Water are currently covered by a subsidy paid by the NSW Government on behalf of NSW taxpayers. This is discussed in more detail in our concurrent review of prices that Essential Water can charge for water and wastewater services in Broken Hill.

Table 2.2 Bills for Essential Water ($2021-22) - without inflation

	2021-22 (current)	2022-23[a]	2023-24[b]	2024-25	2025-26	Change 2021-22 to 2025-26
Usage bill	1,189	1,968	2,230	1,929	1,926	61.9%
Access price bill	24,558	21,574	18,592	18,541	18,541	-24.5%
Total bill	**25,747**	**23,542**	**20,822**	**20,471**	**20,467**	**-20.5%**

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

Source: IPART analysis.

Each year, we adjust WaterNSW's prices for inflation. When inflation is included, prices would still decrease, but at a lower rate. We will continue to adjust prices for inflation every year until 30 June 2026, as future inflation information becomes available.

Taking inflation of 5.1% into account, Essential Water would pay an annual bill of around $24 million under our prices in 2022-23.

2.2 Water transportation bills for offtake customers would also decrease

Similar to how we set prices for Essential Water, we maintained the current price structures for offtake customers. Under our decisions, the usage price for offtake customers will increase, while the fixed price will decrease (see Table 2.3). As outlined in section 2.1, this is due to WaterNSW's higher energy costs (increasing the usage price) and lower financing costs (decreasing the fixed price).

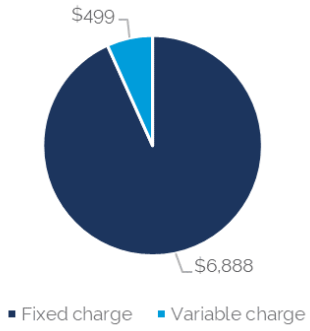
Table 2.3 Prices for offtake customers ($2021-22, without inflation)

	2021-22	2022-23	2023-24	2024-25	2025-26	Change 2021-22 to 2025-26
Usage price, $ per kL	0.21	0.50	0.40	0.35	0.35	65.3%
Fixed price, $ per day	20.78	16.93	16.93	16.93	16.93	-18.5%

Note: Due to rounding, the usage price appears flat.
Source: IPART analysis, WaterNSW, Pricing Proposal to IPART, June 2021, p 78.

Total bills will decrease over the determination period. This is because the increase in the usage price is more than offset by the decrease in the fixed price, which represents a larger share of bills.

Medium customer bills in 2022-23



The fixed price part of the bill is larger than the usage price part

Under our decisions, yearly bills for a medium-sized offtake customer would decrease by around 16% (before inflation) by the end of the 2022 determination period compared to current bills (see Table 2.4).

Table 2.4 Bills for offtake customers ($2021-22, without inflation)

	2021-22 (current)	2022-23[a]	2023-24[b]	2024-25	2025-26	Change 2021-22 to 2025-26
Small customers (0.5 ML)	7,691	7,138	6,398	6,355	6,355	-17.4%
Medium customers (1 ML)	7,797	7,387	6,600	6,530	6,531	-16.2%
Large customers (5 ML)	8,647	9,384	8,214	7,932	7,936	-8.2%

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

Source: IPART analysis

Taking inflation of 5.1% into account, medium-sized offtake customers would pay an annual bill of $7,568 under our prices in 2022-23.

2.3 New prices will commence on 1 January 2023

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

Our view is that both utilities and customers should be no better or worse off as a result of the 6-month delay. Therefore, in setting prices for this review, we have factored in:

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

For details please see Chapter 5 of our Final Technical Report.

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

3 How we determined these prices

In making our decisions on prices, we:

- considered WaterNSW's pricing proposal for the WaterNSW Pipeline and the community's feedback on the proposal, as well as our draft prices
- assessed the reasonable costs of providing reliable water transportation services to in Broken Hill, so that customers pay no more than necessary
- assessed the forecast demand for the WaterNSW Pipeline's services and how it could affect future prices.

The sections below outline each of these steps in more detail.

3.1 A small group of stakeholders provided feedback on WaterNSW's prices

During our review, we sought community feedback on multiple occasions, and we have taken this into account in our final decisions. Sometimes we have had to balance conflicting views from stakeholders as well as our requirement to ensure that WaterNSW receives sufficient funds to provide the level of service expected by the community.

We received submissions from 4 different stakeholders over the course of the review. They covered a range of issues, for example:

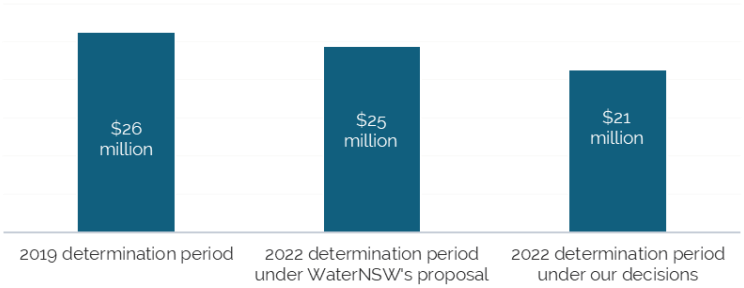
- Broken Hill City Council supported IPART's draft decisions that would lead to Essential Water paying lower water transportation bills.[2]
- Essential Water supported the proposed decrease to prices it pays to transport water via the WaterNSW Pipeline, as WaterNSW Pipeline costs are the largest component of its operating costs.[3]
- PIAC raised concerns about whether existing pricing arrangements for the WaterNSW Pipeline encourage water users to conserve and use water in the most efficient way. PIAC considers the proposed prices do not provide Essential Water and other large users with enough incentive for sustainable water use.[4]
- WaterNSW's submissions to our Issues Paper and Draft Report were focused on operating costs, forecast sales volumes and risk allocation. WaterNSW proposed higher operating costs to cover its corporate overheads allocated to the WaterNSW Pipeline. It also proposed to set forecast sales volume to meet most of water needs in Broken Hill. In addition, WaterNSW proposed to pass on some cost changes to customers if certain external events occur. These proposals are in line with WaterNSW's original pricing proposal.[5]

3.2 Costs to deliver reliable water transportation services in Broken Hill would decrease

When we set prices for a regulated business like WaterNSW, we generally aim to set prices to cover the reasonable costs of providing services to customers. We assessed the costs of providing water transportation services to Essential Water and its offtake customers. We engaged expert consultants to provide advice on whether WaterNSW's proposed costs for the WaterNSW Pipeline are reasonable.

Based on our assessment of the WaterNSW Pipeline's costs, our decision is to set the amount of revenue WaterNSW can recover through prices at around $21 million on average per year, over the next 4 years. Our decision on the revenue level is around 13% lower than WaterNSW's proposed revenue level for the WaterNSW Pipeline, and 19% lower than the revenue level we set in the 2019 review, when compared on an average yearly basis.

The WaterNSW Pipeline's revenue level is lower than the level we set in 2019



Source: WaterNSW, Pricing Proposal to IPART, June 2021, p 71 and IPART analysis.

There are 2 main reasons for the difference between WaterNSW's proposal and the revenue level we have set:

1. Our final decision on the rate of return to finance the WaterNSW Pipeline is materially lower than proposed by WaterNSW. Under our final decision, financing cost accounts for around 52% of WaterNSW's annual revenue requirement
2. The lower financing cost is partially offset by a higher operating cost allowance. While we found some opportunities for WaterNSW to lower the operating costs of the Pipeline, significant increases in energy prices has resulted in an operating allowance slightly higher than originally proposed by WaterNSW.

Our final decision to set the revenue level at around $21 million per year is about the same as the revenue allowance in our draft decision. As above, the overall revenue requirement remains largely unchanged because the reduction in the rate of return and financing costs has been offset by a large increase in energy prices.

3.2.1 The WaterNSW Pipeline's financing costs have decreased since our last review

In 2019, WaterNSW had to raise a significant amount of money to finance the construction of the WaterNSW Pipeline. Financing costs (or rate of return) are ongoing and make up around 52% of the WaterNSW Pipeline's revenue level under our decision. When setting prices, IPART makes an allowance using a standard method to cover these financing costs. Generally, a higher rate of return leads to higher prices.

WaterNSW proposed a rate of return of 3.7% for the WaterNSW Pipeline, which is slightly lower than the rate of return used to set prices in 2019 (4.0%). WaterNSW proposed a change to the way inflation expectations are factored into the calculation of the rate of return. We have decided to maintain our standard method and have set the rate of return at 2.8%. Our final decision is slightly lower than our draft decision of 2.9%, due to us using more up-to-date market information.

The lower rate of return is due to the relatively low current interest rate environment. Should interest rates increase or decrease over the 2022 determination period, the net changes would be factored in prices at the next determination. This is because under our standard method, we have a mechanism that adjusts the rate of return each year to account for changes in interest rates. This helps protect customers and WaterNSW by ensuring that the rate of return reflects new information.

More information on how we set the rate of return, or the Weighted Average Cost of Capital (WACC), is available in Appendix B of our Final Technical Report.

3.2.2 The operating cost allowance is 17% higher than proposed due to increasing energy prices

Operating costs represent about 24% of the WaterNSW Pipeline's required revenue level over the next 4 years. The WaterNSW Pipeline incurs 2 types of operating costs:

- energy costs for transporting water from Murray River to Broken Hill
- other costs, like contractors, corporate overheads and cost of preparing regulatory submissions.

Our final decision is to set prices based on operating costs of around $5.2 million on average per year over the 2022 determination period. We have set operating costs higher than WaterNSW's proposal based on advice from expert cost consultants (AECOM and the CIE). This advice was supported by our own further analysis using data provided by WaterNSW.

Under our decisions, we set an allowance for energy costs at around $2.2 million per year on average. This is approximately $0.7m per year higher than originally proposed by WaterNSW, and mainly reflects a significant increase in energy prices since WaterNSW submitted its pricing proposal in June 2021. Energy costs vary depending on the energy demand of the WaterNSW Pipeline and what the energy price is at the time. Our approach to forecasting energy costs is largely consistent with the approach we adopted in our 2019 review, but has been updated take into account feedback from WaterNSW and data on actual energy use since the Pipeline became operational in 2019. The energy forecast also reflects updated demand forecast and a forecast of energy prices as of September 2022. More information on how we forecast energy costs for the Pipeline is available in Chapter 3 of our Final Technical Report and consultants' report on our website.

WaterNSW also proposed to introduce an energy cost adjustment mechanism that helps protect both customers and WaterNSW if energy prices turn out to be materially different from those forecast and reflected in our decisions. Under this mechanism, actual energy prices over the 2022 determination period would be monitored, and at the next price review, customers would be compensated if energy prices were lower than forecast, while WaterNSW would be compensated if energy prices were higher than forecast

We agree in principle with an energy cost adjustment mechanism, such as that proposed by WaterNSW, given: (a) the materiality of energy costs for operating the Pipeline; (b) the considerable uncertainty around forecast energy prices in the current market; and (c) the inability for WaterNSW to influence prices. However, we are not satisfied that WaterNSW's proposed energy cost adjustment mechanism appropriately allocates risk between WaterNSW and its customers. Instead, we invite WaterNSW to work with us prior to its next submission to develop an energy cost adjustment mechanism that appropriately balances energy cost risk between WaterNSW and its customers, with the intent that this mechanism would apply to energy costs over the 2022 Determination period.

Our final decision is to set other (non-energy) operating costs at around $2.9 million per year for the WaterNSW Pipeline. This is around 23% higher than what we used to set prices in our last review in 2019, but lower than the level proposed by WaterNSW. When compared with costs set in our 2019 review, the difference is driven by our decision on corporate overheads. We have taken this review as an opportunity to make sure the way we set corporate overheads for the WaterNSW Pipeline lines up with how we set them for other parts of WaterNSW.[b]

Our decision to set the operating cost allowance at around $5.2 million per year is higher than our draft decision by about $1.1 million or 28%. As noted earlier, the main driver of this increase in operating costs is significantly higher energy prices.

[b] WaterNSW provides bulk water supply in Greater Sydney and rural areas in NSW, water transportation services in Broken Hill and also part of being part of the Water Administration Ministerial Corporation.

3.3 The WaterNSW Pipeline will continue to be used to meet almost all of Broken Hill's water demand

To set prices, we divided the WaterNSW Pipeline's reasonable costs by customer types and amount of water we expect it to transport over the next 4 years. Our prices are closely aligned with WaterNSW's forecasts for customer numbers and sales volumes, which we consider are reasonable.

Both WaterNSW and Essential Water expect the WaterNSW Pipeline will be used to transport water to meet almost 100% of the Broken Hill community's water needs. This is different to what we expected in our 2019 review. At the time, we estimated Essential Water would use the WaterNSW Pipeline to meet 70% of the community's water needs.

For the 2022 determination period, our decision is to set the WaterNSW Pipeline's annual forecast water sales volumes to Essential Water at around 5,500 ML per year. Based on evidence provided, we agree with WaterNSW and Essential Water that it is efficient to use the WaterNSW Pipeline to meet almost all of the water needs of Broken Hill. This decision is consistent with our draft decision.

PIAC raised concerns about whether the prices we set for the WaterNSW Pipeline would encourage sustainable use of water in Broken Hill. The prices we have set reflect the reasonable cost of providing water transportation service in Broken Hill. We also considered setting further incentives to reduce water use. However we concluded they were not warranted given the arid climate and the need to use water to maintain greenspaces and reduce exposure to lead in Broken Hill. WaterNSW's customers (Essential Water and offtake customers) secure access to water by having licences that entitle them to access water for town water supply, similar to any other water service providers in NSW. Essential Water can also manage the community's water use during drought periods through water restrictions.

4 We consulted extensively with stakeholders

Our review started on 30 June 2021 when WaterNSW submitted its pricing proposal to us. We consulted with the community and other stakeholders, including publishing an Issues Paper and a Draft Report to which we sought feedback and submissions. In September 2022, we also held an in-person public hearing at a local venue in Broken Hill and other stakeholders joined the hearing online (see Figure 4.1).

We took all community views into account in making our final decisions. The pricing proposal from WaterNSW, our Issues Paper, Draft Report, Draft Technical Report, stakeholder submissions and the public hearing transcript and video are available on our website.

Our decisions and recommendations are listed and explained in our Final Technical Report.

Figure 4.1 Timetable for this review

[1] Department of Planning and Environment, Letter on the Subsidy for the WaterNSW Pipeline, August 2022, p 1.
[2] Broken Hill City Council, submission to IPART's Draft Report for the Review of Essential Water's prices for water and wastewater services in Broken Hill from 1 January 2023, September 2022, p 3;
[3] Essential Water, submission to IPART's Issues Paper for the 2021 Review of Essential Energy's water and wastewater prices for Broken Hill, October 2021, p 1.
[4] Public Interest Advocacy Centre, submission to IPART's Issues Paper for the 2021 Review of Essential Energy's water and wastewater prices for Broken Hill, October 2021, p 5.
[5] WaterNSW, submission to IPART's Issues Paper for 2021 Review of WaterNSW's Murray River to Broken Hill Pipeline prices, October 2021, pp 4-6.

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IPART Independent Pricing and Regulatory Tribunal | NSW

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

Final Technical Report

November 2022

Water »

Tribunal Members

The Tribunal members for this review are:

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Deborah Cope
Sandra Gamble

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The Independent Pricing and Regulatory Tribunal (IPART)

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

Acknowledgment of Country

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

Contents

Chapter 1

Introduction

01

1.1 Overview of our decisions

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

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

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

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

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

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

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

1.1.1 Our approach to setting prices for this review

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

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

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

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

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

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

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

1.1.2 We consulted extensively with stakeholders

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

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

Figure 1.1 Timetable for this review

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

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

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

Prices and bills for Essential Water

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

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

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

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

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

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

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

Source: IPART analysis.

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

Prices and bills for offtake customers

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

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

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

Source: IPART analysis.

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

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

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

Source: IPART analysis.

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

1.2 Structure of this report

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

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

1.3 List of decisions

Decisions

7.	To set the Pipeline's efficient capital expenditure to be included in the Regulatory Asset Base (RAB) for the 2019 determination period as shown in Table 4.2.	44
8.	To set the Pipeline's efficient capital expenditure for the 2022 determination period as shown in Table 4.4.	45
9.	That WaterNSW continue to report on the set of performance indicators for the Pipeline as part of its Annual Information Return (AIR), as outlined in Table 4.5.	47
10.	To set the notional revenue requirement for services to Essential Water at $85.5 million over the 2022 determination period as shown in Table 5.1.	50
11.	To set the notional revenue requirement for services to offtake customers at $0.1 million over the 2022 determination period as shown in Table 5.2.	50
12.	To calculate the regulatory asset base for services to Essential Water for 2019-20 to 2025-26 by using: – a 2019-20 opening regulatory asset base of $392.2 million. The regulatory asset base for each year is shown in Table 5.3 and Table 5.4 – $3.9 million (nominal) of prudent and efficient historical capital expenditure added to the RAB over the 2019 determination period (Chapter 4) – forecast capital expenditure added to the RAB over the 2022 determination period of zero (Chapter 4) – asset disposals and cash capital contributions of zero.	52
13.	To calculate the regulatory asset base for services to offtake customers for 2019-20 to 2025-26 by using: – a 2019-20 opening regulatory asset base of $0.4 million. The regulatory asset base for each year is shown in Table 5.5 and Table 5.6 – capital expenditure added to the RAB over the 2019 determination period of zero (Chapter 4) – forecast capital expenditure added to the RAB over the 2022 determination period of around $10,000 (Chapter 4) – asset disposals and cash capital contributions of zero.	53
14.	To calculate the allowance for return of assets (regulatory depreciation), using: – a straight-line depreciation method – for existing assets, the rolled forward asset lives from the 2019 determination period as listed in Table 5.7 – for new assets, the asset lives listed in Table 5.7.	56
15.	For services to Essential Water, to set the allowance for return of assets at $21.0 million over the 2022 determination period as shown in Table 5.8.	56
16.	For services to offtake customers, to set the allowance for return of assets at $0.1 million over the 2022 determination period as shown in Table 5.8	57
17.	For services to Essential Water, to set an allowance for return on assets of $44.6 million over the 2022 determination period (shown in Table 5.9). This is calculated by using: – the RAB values shown in Table 5.4 – a real post-tax weighted average cost of capital of 2.8% – a sampling date of 31 March 2022 for market observations as outlined in Appendix B.	59

Chapter 2

Regulatory setting

02

Summary of our decisions for regulatory settings

We set prices for a 4-year determination period

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

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

We continued to set maximum prices

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

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

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

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

We did not accept WaterNSW's proposed cost pass throughs

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

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

2.1 We set prices for a 4-year determination period

Our decision is:

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

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

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

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

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

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

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

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

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

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

2.1.1 New prices will commence on 1 January 2023

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

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

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

We outline these adjustments in section 5.9.

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

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

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

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

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

2.2 We continued to use price caps

Our decision is:

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

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

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

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

2.3 We used the building block approach

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

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

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

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

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

Figure 2.1 The building block approach

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

Our decision is:

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

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

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

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

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

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

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

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

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

2.5 We retained the current efficiency carryover mechanism

Our decision is:

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

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

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

2.6 We assessed expenditure using a 3-step process

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

Step 1 – Reviewing proposed activities and costs:

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

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

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

Step 3 – Reviewing available data to capture possible future efficiencies

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

Chapter 3

Operating expenditure

03

Summary of our decisions for operating expenditure

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

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

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

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

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

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

WaterNSW incurs 2 types of costs for the Pipeline:

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

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

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

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

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

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

Our decision is:

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

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

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

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

Note: Totals may not sum due to rounding

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

3.1 WaterNSW spent more than expected over the last 3 years

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

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

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

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

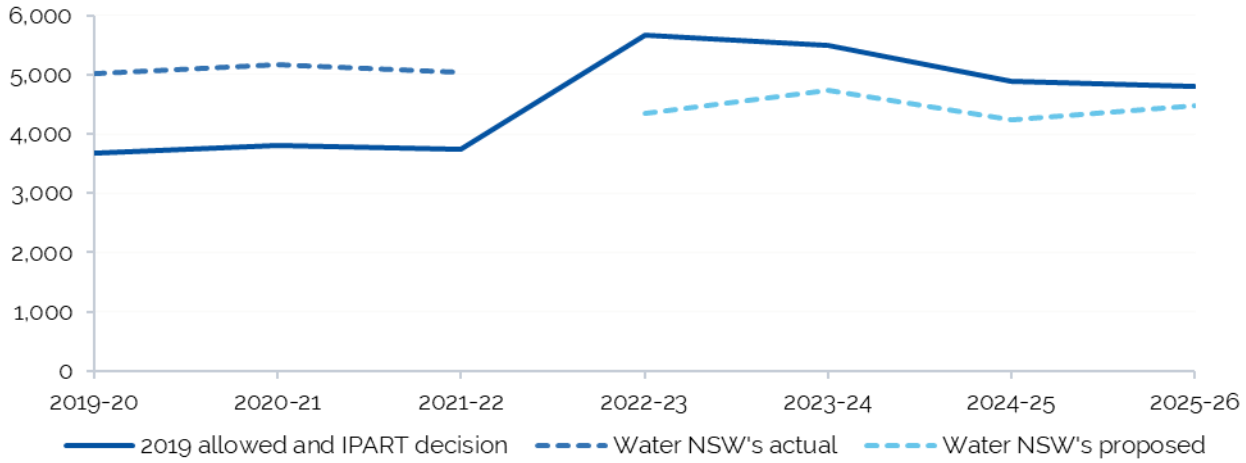
In its June 2021 pricing proposal, WaterNSW proposed operating expenditure of around $4.5 million per year (or $17.8 million in total) for the Pipeline over the 2022 determination period.[16] This is:

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

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

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

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



Source: IPART analysis.

3.3 We set operating expenditure 17% higher than proposed

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

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

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

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

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

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

These adjustments are discussed in detail in the sections below.

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

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

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

Source: IPART analysis.

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

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

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

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

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

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

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

3.3.2 We found opportunities to reduce the proposed regulatory costs

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

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

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

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

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

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

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

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

3.3.3 Benchmark energy costs are higher due to increasing energy prices

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

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

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

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

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

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

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

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

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

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

The following section outlines:

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

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

Energy volume has 2 components:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Table 3.3 Pumping profile by electricity Time of Use period

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

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

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

Table 3.4 Maximum demand 2022/23

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

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

Final decision on benchmark energy demand profile for the Pipeline

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

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

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

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

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

Source: IPART analysis.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Source: IPART analysis

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

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

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

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

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

3.3.5 We consider WaterNSW could make ongoing efficiency savings

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

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

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

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

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

Table 3.7 Decision on continuing efficiency factors

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

Source: IPART analysis.

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

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

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

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

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

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

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

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

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

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

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

Box 3.1 Assessing the proposed true-up for energy costs

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

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

Source: IPART analysis

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

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

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

WaterNSW state the additional cost-true-up elements:

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

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

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

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

Final decision on energy true-up mechanism

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

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

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

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

Our decision is:

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

Chapter 4

Capital expenditure and performance indicators

04

Summary of our decisions for capital expenditure

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Source: IPART analysis.

Our decision is:

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

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

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

Source: IPART analysis.

4.2 WaterNSW proposed minimal capital expenditure for the 2022 determination period

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

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

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

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

Our decision is:

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

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

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

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

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

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

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

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

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

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

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

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

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

Table 4.5 Performance indicators for the Pipeline

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

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

Our decision is:

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

Chapter 5

Other costs and revenue requirement

05

Summary of our decisions for other costs and revenue requirement

WaterNSW's total notional revenue requirement is $85.7 million

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

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

WaterNSW's total return on assets is $44.6 million

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

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

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

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

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

WaterNSW's working capital allowance is $0.5 million

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

WaterNSW's total tax allowance is $1.3 million

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

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

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

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

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

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

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

5.1 WaterNSW's total NRR is $85.7 million

Our decisions are:

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

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

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

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

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

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

[a] Totals do not sum due to rounding.

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

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

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

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

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

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

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

5.2 We used the building block approach to calculate the NRR

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

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

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

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

5.3 We determine the regulatory asset base using our usual methodology

Our decisions for services to Essential Water are:

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

Our decisions for services to offtake customers are:

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

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

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

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

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

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

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

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

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

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

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

Note: Totals may not sum due to rounding.

Source: IPART analysis.

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

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

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

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

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

Note: Totals may not sum due to rounding.

Source: IPART analysis.

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

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

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

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

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

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

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

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

Note: Totals may not sum due to rounding.

Source: IPART analysis.

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

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

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

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

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

Note: Totals may not sum due to rounding.

Source: IPART analysis.

5.3.3 WaterNSW has no cash capital contributions or asset disposals

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

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

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

5.4 WaterNSW's total regulatory depreciation is $21.1 million

Our decisions are:

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

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

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

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

5.4.1 We used straight-line depreciation to calculate regulatory depreciation

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

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

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

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

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

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

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

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

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

Table 5.7 Decision on asset lives (years)

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

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

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

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

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

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

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

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

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

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

Our decisions are:

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

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

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

5.5.1 Our approach to forecasting inflation expectations remains unchanged

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Our decision is:

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

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

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

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

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

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

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

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

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

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

Our decision is:

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

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

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

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

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

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

Note: Totals may not sum due to rounding.

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

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

5.8 WaterNSW's tax allowance is $1.3 million

Our decisions are:

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

We included an explicit allowance for tax because we use a post-tax WACC to estimate the allowance for a return on assets in the revenue requirement (Table 5.9). This tax allowance reflects the regulated business's forecast tax liabilities.

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

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

Note: Totals may not sum due to rounding.

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

We calculated the tax allowance for each year by applying a 30% statutory corporate tax rate adjusted for franking credits to the business's (nominal) taxable income.h We applied our standard methodology to set the tax allowance. The allowance is lower than that proposed by WaterNSW mainly because we used a lower WACC.

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

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

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

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

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

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

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

Note: Totals may not sum due to rounding

Source: IPART analysis

5.10 We smoothed the revenue requirement before setting prices

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

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

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

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

Note: Totals may not sum due to rounding

Source: IPART analysis.

Chapter 6

Forecast customer numbers and water sales

06

Summary of our decisions for customer numbers and water sales

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

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

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

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

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

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

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

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

6.1 We accepted WaterNSW's proposal on customer numbers

Our decision is:

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

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

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

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

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

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

Table 6.1 Decision on forecast customer and offtake numbers

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

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

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

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

Our decision is:

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

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

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

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

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

Table 6.2 Decision on forecast water sales volumes (ML)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Chapter 7

Price structures and prices

07

Summary of our decisions on prices

Water transportation prices would decrease

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

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

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

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

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

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

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

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

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

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

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

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

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

7.1 Water transportation prices for Essential Water would change

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

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

In comparison, WaterNSW proposed to:

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

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

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

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

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

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

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

Source: IPART analysis.

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

7.2 Water transportation prices for offtake customers would change

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

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

In comparison, WaterNSW proposed to:

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

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

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

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

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

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

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

Source: IPART analysis.

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

Our decision is:

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

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

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

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

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

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

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

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

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

Source: IPART analysis

Box 7.1 Pricing principles for regulated water businesses

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

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

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

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

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

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

Our decision is:

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

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

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

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

7.5 We have decreased the access price for Essential Water

Our decision is:

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

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

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

7.6 We have decreased the fixed price for offtake customers

Our decision is:

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

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

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

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

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

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

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

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

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

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

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

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

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

Our decision is:

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

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

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

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

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

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

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

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

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

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

Chapter 8

Impacts of our pricing decisions

Impacts of our pricing decisions

Essential Water and offtake customers' bills would decrease

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

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

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

WaterNSW will be able to meet service standards for its customers

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

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

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

We have considered impacts on the Consolidated Fund

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

WaterNSW can recover all efficient costs in meeting its environmental obligations

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

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

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

8.1 Essential Water's bills would decrease

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

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

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

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

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

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

Source: IPART analysis

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

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

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

Source: IPART analysis

8.2 Offtake customers' bills would decrease

The analysis for bills for offtake customers is based on:

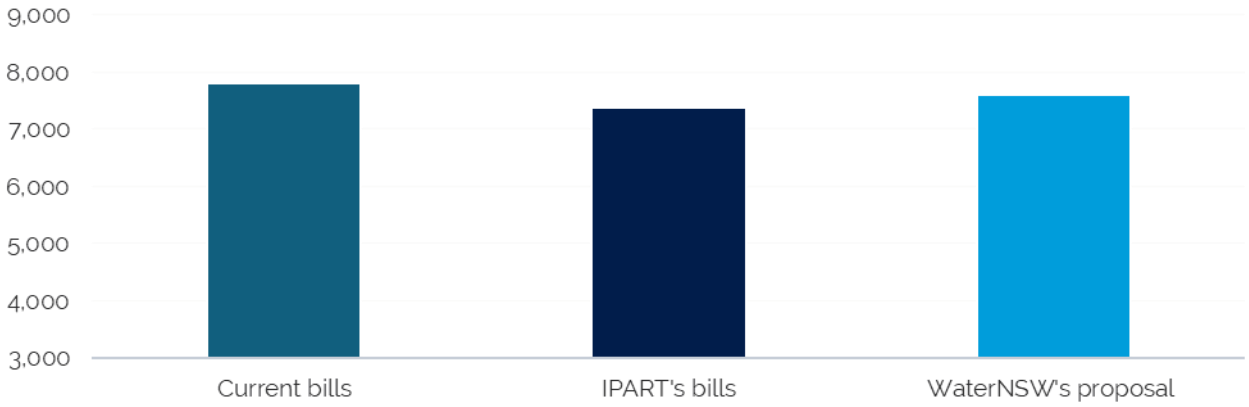
- Small customers using 0.5ML of water per year.
- Medium customers using 1ML of water per year.
- Large customers using 5ML of water per year.

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

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

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

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



Source: IPART analysis

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

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

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

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

Source: IPART analysis

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

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

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

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

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

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

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

Source: IPART analysis

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

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

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

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

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

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

Source: IPART analysis

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

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

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

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

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

8.4 Impacts on WaterNSW

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

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

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

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

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

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

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

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

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

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

We conduct financeability tests using 3 steps:

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

Step 1: Calculate our standard financial ratios

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

Box 8.1 Our financeability target ratios for the benchmark test

Real Interest Coverage Ratio (RICR) >2.2x

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

Real FFO over Debt >7.0%

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

Net Debt/RAB Gearing ratio <70%

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

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

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

Table 8.8 Financeability test results

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

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

Source: IPART analysis

Benchmark test – RICR

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

Benchmark test – Real FFO over Debt

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

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

Benchmark test – Net Debt/RAB Gearing ratio

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

Step 3: Conclusion

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

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

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

There is significant headroom in the RICR

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

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

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

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

Transparent and predictable regulatory framework results in revenue predictability

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

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

8.5 Matters to be considered by IPART under the IPART Act

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

8.5.1 We have considered impacts on the Consolidated Fund

Under Section 16 of the IPART Act, IPART is required to report on the likely impact to the Consolidated Fund if prices are not increased to the maximum levels permitted. If this is the case, then the level of tax equivalents and dividends paid to the Consolidated Fund will fall. The extent of this fall will depend on NSW Treasury's application of its financial distribution policy and how the change affects after-tax profit.

Our financial modelling is based on a tax rate of 30% for pre-tax profit and dividend payments at 70% of after-tax profit. Under our modelling, a $1 decrease in pre-tax profit would result in a loss of revenue to the Consolidated Fund of 49 cents in total, which is 70% of the decrease in after-tax profit of 70 cents.

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

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

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

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

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

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

Appendix A

Matters to be considered by IPART under the IPART Act

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

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

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

a. The cost of providing the services concerned

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

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

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

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

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

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

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

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

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

k. The social impact of the determinations and recommendations

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

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

[a] The IPART Act 1992 is available here.

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

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

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

a. the government agency's economic cost of production
b. past, current or future expenditures in relation to the government monopoly service
c. charges for other monopoly services provided by the government agency
d. economic parameters, such as discount rates, or movements in a general price index (such as CPI), whether past or forecast
e. a rate of return on the assets of the government agency
f. a valuation of the assets of the government agency
g. the need to maintain ecologically sustainable development (within the meaning of section 6 of the Protection of the Environment Administration Act 1991) by appropriate pricing policies that take account of all the feasible options available to protect the environment
h. the need to promote competition in the supply of the service concerned
i. considerations of demand management (including levels of demand) and least cost planning.

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

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

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

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

Appendix B

Weighted average cost of capital

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

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

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

We used our standard methodology to calculate the WACC. Under our approach we estimate one WACC based on current market data and one based on long-term average data. When our uncertainty index, which indicates the level of volatility in capital markets, is within one standard deviation of its mean value, we select the mid-point of the current and long-term WACC values. The uncertainty index was within this range at the time we set the WACC.

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

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

	Step 1 – Market data	
	Current	**Long term**
Nominal risk-free rate	1.7%	2.5%
Inflation	2.6%	2.6%
Implied Debt Margin	2.3%	2.4%
Market Risk premium	8.2%	6.0%
Debt funding	60%	60%
Equity funding	40%	40%
Total funding (debt + equity)	100%	100%
Gamma	0.25	0.25
Corporate tax rate	30%	30%
Effective tax rate for equity	30%	30%
Effective tax rate for debt	30%	30%
Equity beta	0.70	0.70
Cost of equity (nominal post-tax)	7.4%	6.7%
Cost of equity (real post-tax)	4.7%	4.0%
Cost of debt (nominal pre-tax)	4.0%	4.9%
Cost of debt (real pre-tax)	1.4%	2.2%
Nominal vanilla (nominal post-tax) WACC	5.4%	5.6%
Post-tax real WACC	**2.7%**	**2.9%**
Pre-tax nominal WACC	6.2%	6.4%
Pre-tax real WACC point estimate	3.5%	3.7%

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

Source: IPART calculations.

B.2 Our methodology to calculate WACC parameters

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

B.3 Gearing and beta

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

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

B.4 Sampling dates for market observations

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

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

Our inflation forecast was produced using IPART's standard approach, [105] with the Reserve Bank of Australia 1-year ahead forecast sourced from the February 2022 Statement of Monetary Policy.

B.5 Tax rate

We assumed the Benchmark Equivalent Entity is a large public water utility. The scale economies that are important to firms of this type suggested the Benchmark Equivalent Entity would be likely to be well above the turnover threshold at which a firm becomes ineligible for a reduced corporate income tax rate. Therefore, we used a tax rate of 30%.

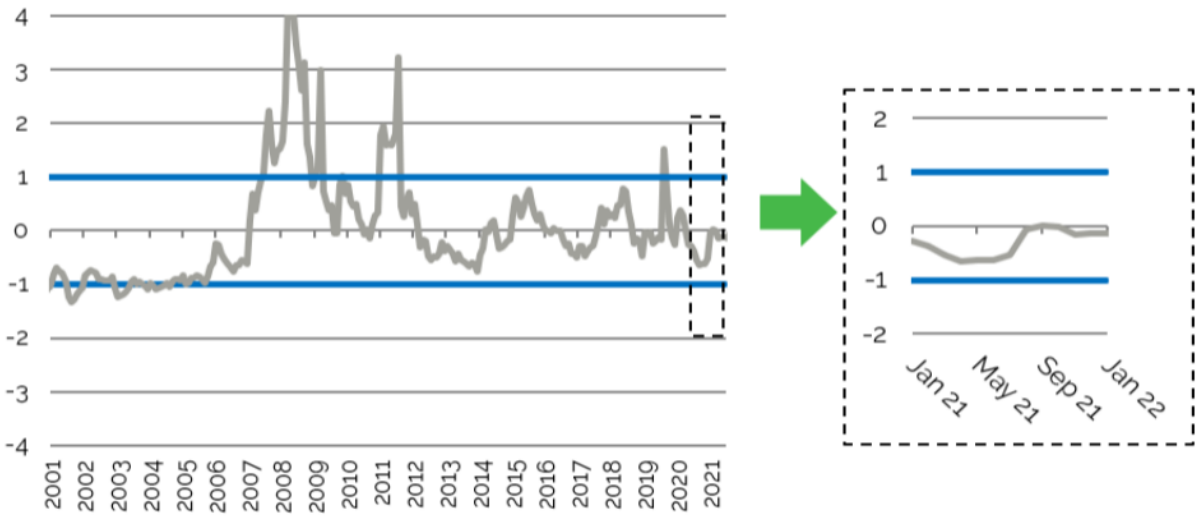
B.6 Application of trailing average method

Our 2018 review of the WACC method introduced a decision to estimate both the long-term and current cost of debt using a trailing average approach, which updates the cost of debt annually over the regulatory period. As foreshadowed in our 2018 review of the WACC method, we employed a transition to trailing average in the calculations presented above.

B.7 Uncertainty index

We tested the uncertainty index for market observations to the end of March 2022. It was within the bounds of plus and minus one standard deviation of the long-term mean value of zero. Therefore, we maintained the default 50%/50% weighting between current and historic market estimates of the cost of debt and the cost of equity (Figure B.1).

Figure B.1 IPART's uncertainty indexs



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