

sunwater



Irrigation Price Path

1 July 2025 to 30 June 2029

Mareeba-Dimbulah Water Supply Scheme

04 May 2023

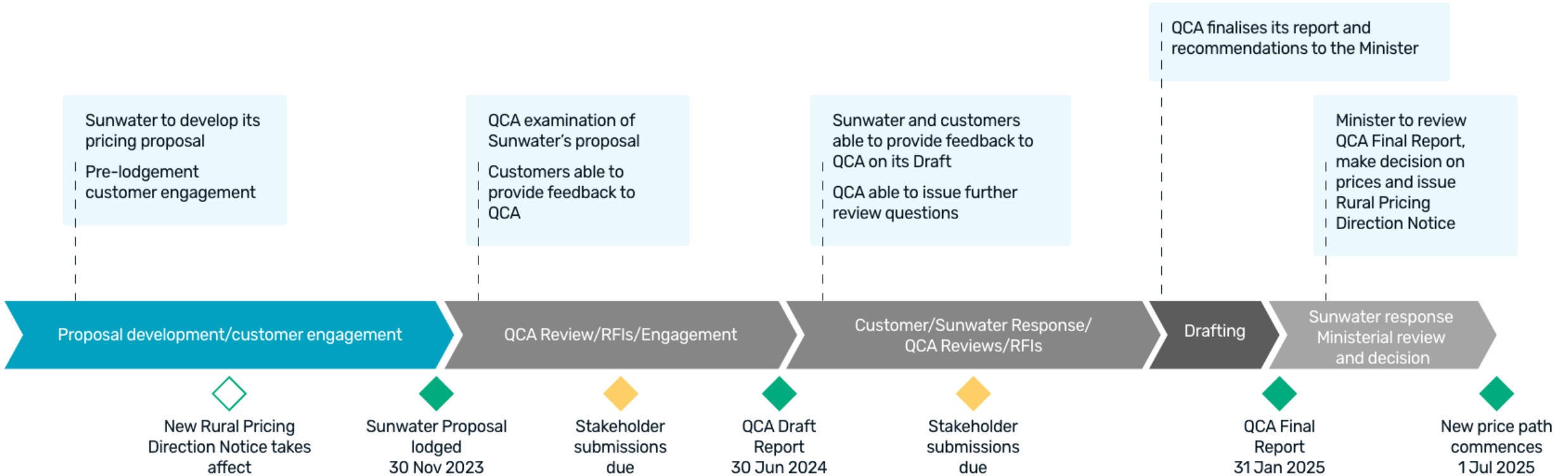
Agenda

Agenda items

Welcome Acknowledgement of Country	William Weaver	10 mins
Overview of the price path process	Bob Telford	10 mins
What to expect from Sunwater	Keelie O'Sullivan	10 mins
Scheme level overview: current prices	Bob Telford	30 mins
Questions	All	30 mins

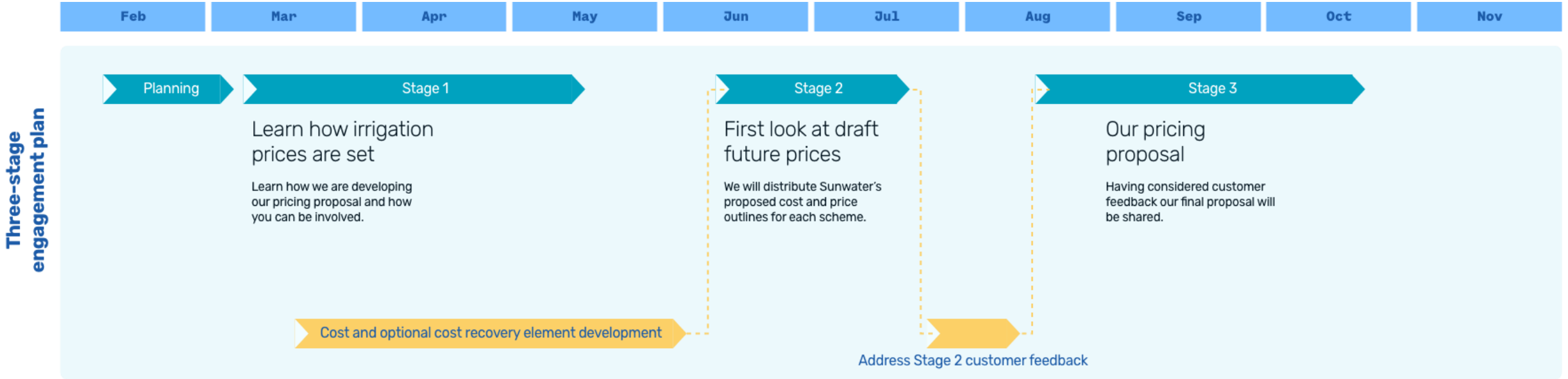
Overview of the price path process

Overview of the price path process



What to expect from Sunwater

What to expect from Sunwater



Scheme Level Overview

Overview of the price setting process

Step 1

Allocate revenue by charge type (Variable or fixed)

Includes operating expenditure, annuity contribution and revenue offset revenue building blocks.

Fixed (Part A/C)

- ✓ **All schemes**
- ✓ 80 percent of operations and maintenance direct costs
- ✓ all other costs (including electricity) *Large electricity using schemes*
- ✓ Varies according to scheme

Variable (Part B / D)

- ✓ **All schemes**
- ✓ 20 percent of operations and maintenance direct costs *Large electricity using schemes*
- ✓ Varies according to scheme

Step 2

Allocate fixed revenue to priority group allocation buckets

Allocation factors are relatively static, only changing when scheme operating parameters change, such as when entitlements are converted from one priority to another.

Fixed (Part A/C)

- ✓ **Bucket 1**
Allocation by entitlement percentage
- ✓ 50 percent of operations (direct and indirect) and revenue offsets
- ✓ **Bucket 2**
Allocation by headworks utilization factor
- ✓ All other categories

Step 3

Allocate fixed revenue to priority group

Apply the fixed revenue allocators to set the revenue requirement by Part A / Part C priority. For distribution schemes, revenue associated with customer loss entitlements are added here.

Fixed (Part A/C)

- ✓ **Bucket 1**
Allocation by entitlement percentage
- ✓ Costs x percentage = priority group revenue
- ✓ **Bucket 2**
Allocation by headworks utilization factor
- ✓ Costs x percentage = priority group revenue

Step 4

Calculate cost reflective prices

Cost reflective prices are set first using a assigned revenue and volumes to produce \$/ML prices.

Part A/C High Priority (\$/ML)
= High priority costs (\$) / gross entitlements (ML WAE)

Part A/C Medium Priority (\$/ML)
= Medium priority costs (\$) / gross entitlements (ML WAE)

Part B / D (\$/ML)
= Variable costs (\$) / [Entitlements (net of losses) ML WAE x usage % (ML / ML WAE)]

Step 5

Calculating recommended prices

Cost reflective prices are then smoothed across the four-year price path period to set target prices. Recommended prices are set with reference to current prices, target prices and the price path principles.

Mareeba-Dimbulah Water Supply Scheme

Scheme Overview



204,425 ML in entitlements, with an average annual usage of 132,184 ML



133 irrigation customers

Major assets



Tinaroo Falls Dam

Key operations and maintenance activities



Comprehensive dam inspections



Customer meter replacements

Pricing tariffs



Bulk supply:
Single tariff group with fixed (Part A) and variable (Part B) charges. Access charge paid per customer and offsetting fixed costs.

Mareeba-Dimbulah Distribution Scheme

Water Supply Scheme

Scheme Overview



146,934 ML in entitlements,
with an average annual
usage of 92,610 ML.
45,000 ML in customer loss
entitlements

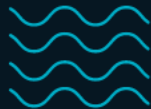


973 irrigation customers
(includes river supplemented
streams & Walsh River)

Major assets



Bruce Weir / Collins Weir,
Dulbil Weir / Granite Creek Weir /
Leafgold Weir,
Solanum Weir



Price Creek B pump station / WB10
pump station /
Paddy's Green A pump station &
Paddy's Green B pump station

Key operations and maintenance activities



Preventative and planned /
unplanned corrective maintenance
mainly due to ageing assets



Infrastructure refurbishment e.g.
air valves, gates and concrete lining

Pricing tariffs



Five tariff groups with a fixed (Part C)
charge and variable (Part D) charge.

Outside a relift up to 100 ML

Outside a relift 100 ML to 500 ML

Outside a relift over 500 ML

River supplementary streams &
Walsh River

Relift

Participant in electricity cost
pass-through trial

Mareeba-Dimbulah Water Supply Scheme

Entitlements overview

Entitlements		Customer losses	Irrigation
High	14,026 ML	8,000 ML	0 ML
Medium	190,399 ML	37,000 ML	151,203 ML
Total	204,425 ML	45,000 ML	151,203 ML

Pricing breakdown Medium priority (MP)

Part A

Part B

Mareeba-Dimbulah - River Tinaroo/Barron



Legend

- Price charged
- Price discount
- Transition discount
- \$xx.xx Cost reflective price

*This is a breakdown of current prices.

*A negative (or below the line) segment reflects the amount paid by customers that was above the lower bound cost reflective price.

Mareeba-Dimbulah Distribution Scheme

Entitlements overview

Entitlements		Customer losses	Irrigation
High	556 ML	8,000 ML	0 ML
Medium	146,378 ML	37,000 ML	144,538 ML
Total	146,934 ML	45,000 ML	144,538 ML

Restricted

Pricing breakdown Medium priority (MP)

Part C

Part D

Mareeba-Dimbulah - outside a relift up to 100 ML



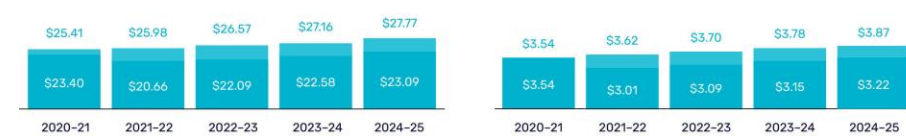
Mareeba-Dimbulah - outside a relift up to 100 ML to 500 ML



Mareeba-Dimbulah - outside a relift up to 500 ML



Mareeba-Dimbulah - river supplemented streams & Walsh River



Mareeba-Dimbulah - relift



Legend



*This is a breakdown of current prices.

*A negative (or below the line) segment reflects the amount paid by customers that was above the lower bound cost reflective price.

Price setting process (2023-24 price example)

Step 1

Allocate revenue by charge type

		Variable		Fixed		WAE Priority %		HUF %	
						High	6.9%	High	53.0%
Revenue offsets	-98.3			100%	-98.3	41%	-40.3	50%	-49.15
Operations - D	373.9	16%	61.32	80%	299.1	41%	122.6	50%	149.57
Operations - I	394.1			100%	394.1	41%	161.6	50%	197.07
Operations - IGEM	150.5							100%	150.46
Maintenance - D	178.9	16%	29.34	80%	143.1			100%	143.14
Maintenance - I	208.0							100%	207.96
Insurance	209.5							100%	209.50
Electricity	0.97	0.00%	0.00					100%	0.97
Annuity	707.3							100%	707.31
	2,124.89		90.67				243.9		1716.83

Key inputs	WAE	WAE%	Usage	HUF
High priority	14,026	6.9%		53.0%
Medium priority	190,399	93.1%		47.0%
Total	204,425		64.7%	
Customer losses	45,000			
Sub-scheme splits	0			

Step 2

Allocate fixed revenue to priority group allocation buckets

Distribution losses				
Calculated in bulk scheme and picked up in distribution system				
High priority	x	0.57	=	528.54
Medium priority	x	19.43%	=	200.96
Variable	x	22.01%	=	19.96

Step 3

Allocate revenue to priority group

	Revenue requirement by priority group	Losses	Revenue requirement after losses conversion	Entitlements	Usage %
Part A - HP	$6.9\% \times 243.9 + 53.0\% \times 1,716.83 = 926.7$	- 528.54	= 398.1	$\times 1,000 / 6,026.00$	= \$66.07
Part A - MP	$93.1\% \times 243.9 + 47.0\% \times 1,716.83 = 1,034.12$	- 200.96	= 833.16	$\times 1,000 / 190,399.00$	= \$4.38
Part B	90.67	- 19.96	= 70.71	$\times 1,000 / [159,425.00 \times 64.7\%]$	= \$0.69

Step 4

Calculate cost reflective prices

Price setting process Distribution Scheme (2023-24 price example)

Step 1

Allocate revenue by charge type

	Variable	Fixed
Revenue offsets	-709.9	100% -709.9
Operations - D	20% 257.5	80% 1,030.0
Operations - I		100% 1,440.5
Operations - IGEM		100% 0.0
Maintenance - D	20% 306.0	80% 1,224.0
Maintenance - I		100% 1,505.1
Insurance	0% 0.0	100% 496.4
Electricity	100% -6.2	0% 0.0
Annuity		100% 987.5
Total	6,530.8	5,973.5

Key inputs	WAE	WAE%	Usage	HUF
High priority	556.00	0.4%		0.0%
Medium priority	146,378.00	99.6%		100.0%
Total	146,934.00		63.0%	
Customer losses	45,000.00			
Water harvesting	0.00			

Step 2

Allocate fixed revenue to priority group allocation buckets

WAE Priority %	HUF %
High 0.4%	High 0.0%

100% of fixed distribution revenue is allocated via the WAE %

Distribution revenue is not allocated via the HUF

Distribution losses	
Calculated in bulk scheme	
High priority	= 528.54
Medium priority	= 200.96
Variable	= 19.96

Step 3

Allocate revenue to priority group

	Revenue requirement by priority group	Conversion	Entitlements	Usage %	Water harvesting
Part C - HP	$0.4\% \times 5,973.53 = 22.60 + [528.54 + 200.96] \times 0.4\%$	= 25.36	x 1,000 / 556.00		= \$45.62
Part C - MP	$99.6\% \times 5,973.53 = 5,950.93 + [528.54 + 200.96] \times 99.6\%$	= 6,677.66	x 1,000 / 146,378.00		= \$45.62
Part D	$557.31 + 19.96$	= 577.27	x 1,000 / [146,934.00 x 63.0% + 0.00]		= \$6.23

Step 4

Calculate cost reflective prices

Step 5

(worked example)

Price setting process

Water Supply Scheme (generic) worked example using 2020-21 to 2023-24 QCA recommended costs

Step 5a

Calculate smoothed target prices

Cost reflective prices are then smoothed across the four-year price path period to set target prices

Add QCA Fee			Target prices Unsmoothed				Target prices Smoothed			
			2020/21	2021/22	2022/23	2023/24	2020/21	2021/22	2022/23	2023/24
Part A HP	\$50.71/ML + \$0.47/ML = \$51.19/ML		\$45.93	\$48.18	\$50.07	\$51.19	\$47.19	\$48.25	\$49.33	\$50.44
Part A MP	\$21.73/ML + \$0.47/ML = \$22.21/ML		\$19.99	\$20.92	\$21.72	\$22.21	\$20.50	\$20.96	\$21.42	\$21.90
Part B	\$4.02/ML + \$0.00/ML = \$4.02/ML		\$3.75	\$3.83	\$3.92	\$4.02	\$3.75	\$3.84	\$3.92	\$4.01

Steps 1 through 4 apply to each year of the forecast pricing period

Smoothed revenues (or prices) are set with a defined rate of escalation (e.g. the expected inflation rate) from Year 1 to Year 4. They are calculated on the basis that the present value (PV) of smoothed revenues (or revenues arising from smoothed prices) is equivalent to the PV of the building blocks revenues.

Step 1

Convert four years of revenue requirement (inclusive of QCA fees) into \$2019-20
 = NPV(4.37%, (946.8; 990.9; 1,028.5; 1,051.6)) = 3,529.7 (\$ thousands) [nominal WACC]

Step 2

Convert the denominator (WAE ML) into present value terms
 = NPV(2.09%, (47,357; 47,357; 47,357; 47,357)) = 179,948.98 (ML WAE) [real WACC]

Step 3

Divide step 1 result by step 2 result and multiply by 1,000
 = 20.047 (\$/ML WAE) – the Year 0 price (in 2019-20 dollars)

Step 4

Compound Year 0 price by forecast inflation (2.24%) for each year of the price path

Year 0	Year 1	Year 2	Year 3	Year 4
2019/20	2020/21	2021/22	2022/23	2023/24
\$20.47	$\times (1+2.24\%)^1$	$\times (1+2.24\%)^2$	$\times (1+2.24\%)^3$	$\times (1+2.24\%)^4$
	= \$20.50	= \$20.96	= \$21.42	= \$21.90

Price setting process

Water Supply Scheme (generic) worked example using 2020-21 to 2023-24 QCA recommended costs

Step 5b

Calculate recommended prices

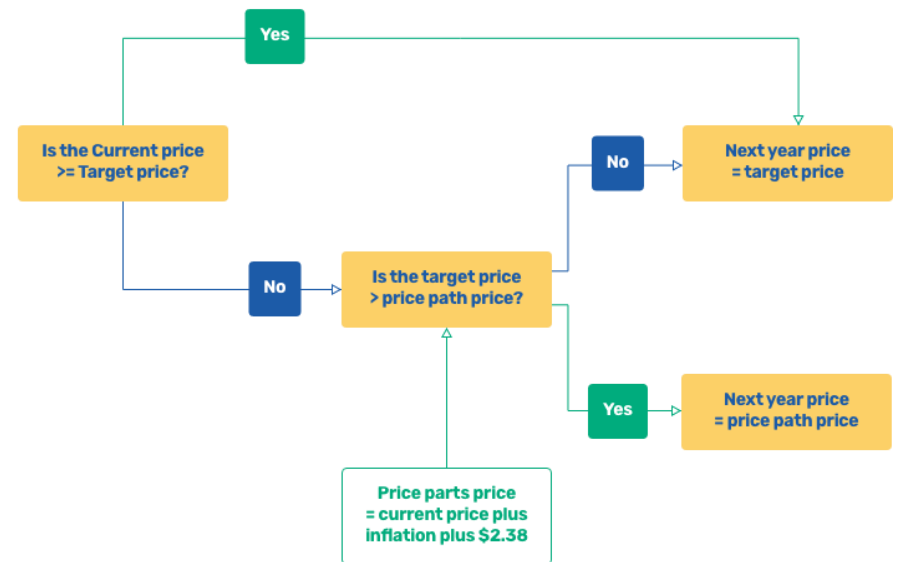
Customer prices are then set with reference to current prices, target prices and the pricing principles

	Target prices Smoothed				Transition path prices				
		2.24%	2.24%	2.24%	Actual	Price path			
	2020/21	2021/22	2022/23	2023/24	2020/21	2020/21	2021/22	2022/23	2023/24
Part A HP	\$47.19	\$48.25	\$49.33	\$50.44	Not set	Not set	Not set	Not set	Not set
Part A MP	\$20.50	\$20.96	\$21.42	\$21.90	\$14.89	\$20.50	\$20.96	\$21.42	\$21.90
Part B	\$3.75	\$3.84	\$3.92	\$4.01	\$3.13	\$3.75	\$3.84	\$3.92	\$4.01

Smoothed revenues (or prices) are set with a defined rate of escalation (e.g. the expected inflation rate) from Year 1 to Year 4. They are calculated on the basis that the present value (PV) of smoothed revenues (or revenues arising from smoothed prices) is equivalent to the PV of the building blocks revenues.

Recommended prices are set using target (smoothed) prices and applying the price path principles outlined in the referral notice.

Note the flowchart shown reflects the current (as at 21 March 2023) rural pricing direction notice where prices above lower bound immediately transition to lower bound.



A photograph of a small dam or weir with water cascading over it, surrounded by green foliage. The water is white and frothy as it falls. The background is dark and out of focus, showing more greenery.

Thank you.

sunwater