

sunwater



Irrigation Price Path

1 July 2025 to 30 June 2029

Burdekin Haughton Water Supply Scheme

18 May 2023

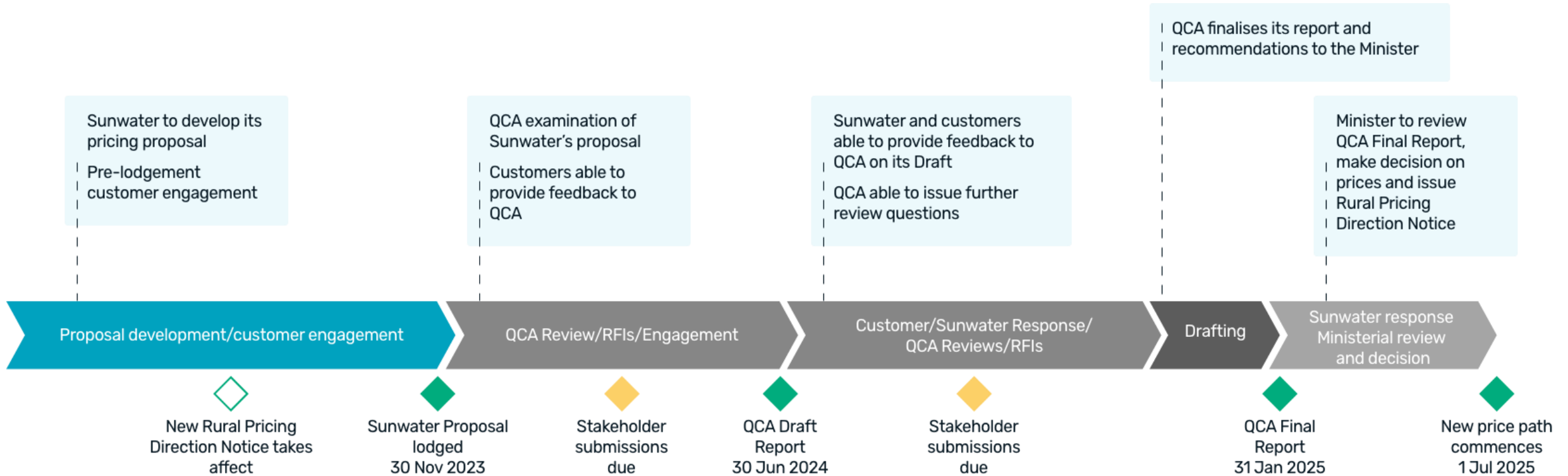
Agenda

Agenda items

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

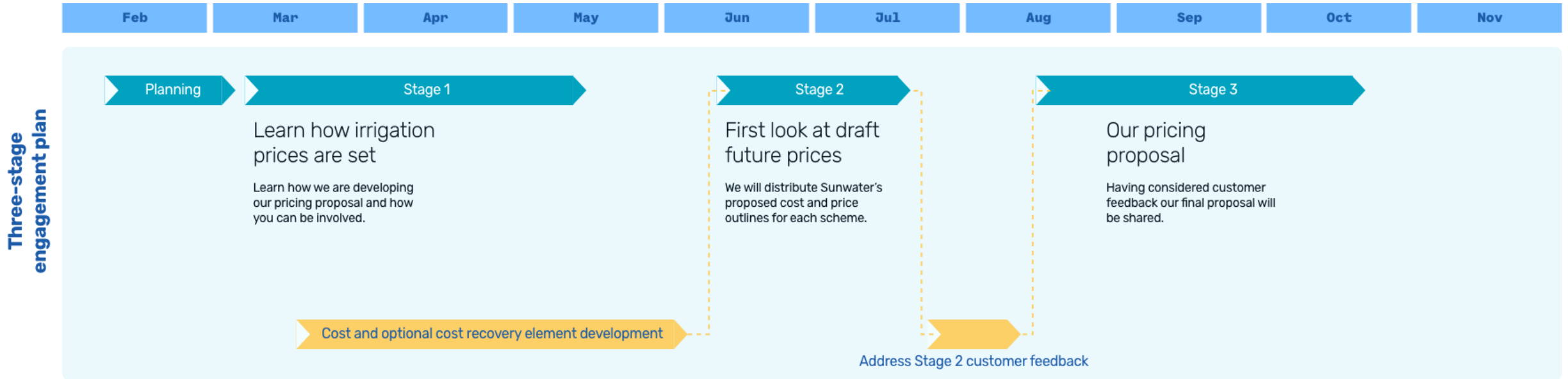
Overview of the price path process

Overview of the price path process



What to expect from Sunwater

What to expect from Sunwater



Scheme Level Overview

Burdekin Haughton Water Supply Scheme

Scheme Overview



1,079,592 ML in entitlements, with average annual usage of 592,926 ML



375 total customers



69 irrigation customers



Related distribution scheme – Burdekin Distribution Scheme (AIE)

Key operations and maintenance activities



Comprehensive dam and weir inspections



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



Infrastructure refurbishment e.g. hydraulic systems

Major assets



Burdekin Falls Dam, is the scheme's major storage, and includes 3 saddle dams



Clare Weir / Gorge Weir / Blue Valley Weir / Val Bird Weir and Giru Weir

Pricing tariffs



Single tariff group, with fixed (Part A) charges for High and Medium priority entitlements and a common variable (Part B) charge



No risk or other forms of entitlements or usage (e.g. water harvesting)

Burdekin Haughton (AIE) Water Supply Scheme

Scheme Overview

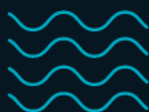


331,590 ML in entitlements,
with average annual usage
of 215,598 ML



243 irrigation customers

Major assets



Pump stations on Burdekin River -
Tom Fenwick / Val Bird Weir / Giru Weir
Clare A / Clare B / Clare B8 relift /
Dalbeg A / Dalbeg B / Dalbeg relift /
Elliot / Millaroo A /
Millaroo B / Millaroo relift

Key operations and maintenance activities



Electricity - (participating in
the electricity cost
pass-through trial)



Pump station equipment
and pump refurbishments



Concrete channel lining
refurbishments

Pricing tariffs



Three tariff groups - Burdekin
channel, Giru Groundwater &
Glady's Lagoon (other than
from natural yeild), with fixed
Part A & C charges and
volumetric Part B & D
charges.



Channel harvesting, same
as volumetric Part D (from
fees and charges schedule)

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.

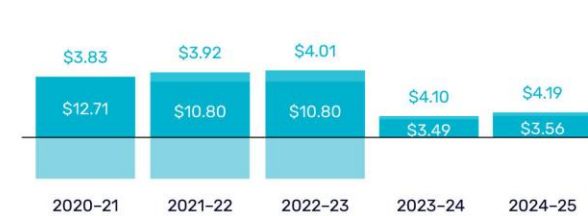
Burdekin Haughton Water Supply Scheme

Entitlements overview

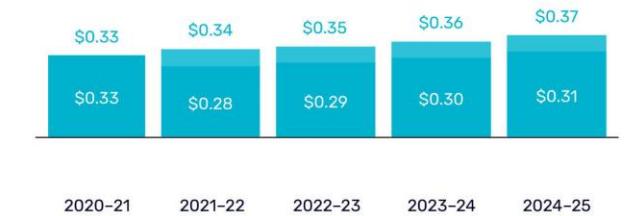
Entitlements		Customer losses	Irrigation
High	99,998ML	16,260 ML	0 ML
Medium	979,594 ML	114,286 ML	450,213 ML
Total	1,079,592 ML	130,546 ML	450,213 ML

Pricing breakdown Medium priority (MP)

Part A



Part B



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.

Burdekin Haughton AIE Water Supply Scheme

Entitlements overview

	Entitlements	Customer losses	Irrigation
High	10,017ML	16,260 ML	0 ML
Medium	321,573 ML	114,286 ML	321,017 ML
Total	331,590 ML	130,546 ML	321,017 ML

Pricing breakdown Medium priority (MP)

Part C

Part D

Burdekin channel



Burdekin channel - Giru Groundwater



Burdekin channel - Gladys Lagoon (other than Natural Yield)



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 %
Revenue offsets	-1.1		100% -1.1	High 9.3%	High 21.0%
Operations - D	647.4	20% 129.48	80% 517.9	50% -0.6	50% -0.6
Operations - I	695.9		100% 695.9	50% 259.0	50% 259.0
Operations - IGEM	117.1			50% 347.9	50% 347.9
Maintenance - D	414.1	20% 82.82	80% 331.3		100% 117.1
Maintenance - I	278.7				100% 117.1
Insurance	1,040.2				100% 278.7
Electricity	119.6	0% 0.0			100% 1,040.2
Annuity	1,390.8				100% 119.6
	4,702.7	212.3		606.3	3,884.0

Key inputs	WAE	WAE%	Usage	HUF
High priority	99,998	9.3%		21.0%
Medium priority	979,594	90.7%		79.0%
Total	1,079,592		54.9%	
Customer losses	130,546			
Sub-scheme splits	0			

Step 2

Allocate fixed revenue to priority group allocation buckets

	WAE Priority %	HUF %
High priority	9.3%	21.0%
Medium priority	90.7%	79.0%
Variable	12.09%	

Distribution losses			
Calculated in bulk scheme and picked up in distribution system			
High priority	x	16.26%	= 141.76
Medium priority	x	11.67%	= 422.17
Variable	x	12.09%	= 25.67

Step 3

Allocate revenue to priority group

	Revenue requirement by priority group	Losses	Revenue requirement after losses conversion	Entitlements	Usage %
Part A - HP	$9.3\% \times 606.3 + 21.0\% \times 3,884.0 = 871.8$	141.76	$730.1 \times 1,000 / 83,738.00$		\$8.72
Part A - MP	$90.7\% \times 606.3 + 79.0\% \times 3,884.0 = 3,618.6$	422.17	$3,196.4 \times 1,000 / 865,307.80$		\$3.69
Part B	212.3	25.67	$186.6 \times 1,000 / [949,045.80 \times 54.9\%]$		\$0.36

Step 4

Calculate cost reflective prices

Price setting process (2023-24 price example)

Step 1

Allocate revenue by charge type

		Variable	Fixed
Revenue offsets	-913.1		100% -913.1
Operations - D	2,933.2	20% 586.6	80% 2,346.6
Operations - I	3,110.6		100% 3,110.6
Operations - IGEM	0.0		100% 0.0
Maintenance - D	4,299.1	20% 859.8	80% 3,439.3
Maintenance - I	2,544.1		100% 2,544.1
Insurance	655.7	0% 0.0	100% 655.7
Electricity	5,538.9	77% 4256.7	23% 1,282.1
Annuity	2,096.5		100% 2,096.5
	20,265.1	5703.2	14,561.9

Step 2

Allocate fixed revenue to priority group allocation buckets

WAE Priority %	HUF %
High 3.0%	High 0.0%

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

Distribution revenue is not allocated via the HUF

Step 3

Allocate revenue to priority group

	Revenue requirement by priority group	Conversion	Entitlements	Usage %	Water harvesting	
Part C - HP	$3.0\% \times 14,561.86 = 439.90 + [141.76 + 422.17]$	$\times 3.0\%$	$= 456.93$	$\times 1,000 / 10,017.00$		= \$45.62
Part C - MP	$97.0\% \times 14,561.86 = 14,121.96 + [141.76 + 422.17]$	$\times 97.0\%$	$= 14,668.85$	$\times 1,000 / 321,573.00$		= \$45.62
Part D	$5,703.20 + 25.67$		$= 5,728.87$	$\times 1,000 / [331,590.00 \times 65.0\% + 16,436.53]$		= \$24.69

Key inputs	WAE	WAE%	Usage	HUF
High priority	10,017.00	3.0%		0.0%
Medium priority	321,573.00	97.0%		100.0%
Total	331,590.00		65.0%	
Customer losses	130,546.20			
Water harvesting	16,436.53			

Distribution losses	
Calculated in bulk scheme	
High priority	= 141.76
Medium priority	= 422.17
Variable	= 25.67

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

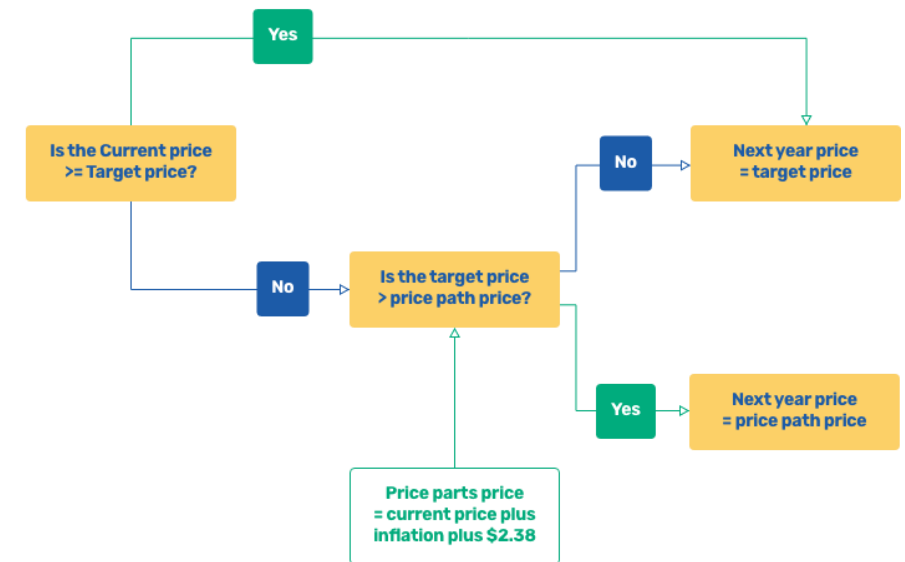
Customer prices are then set with reference to current prices, target prices and the pricing principles

	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 shows more trees and a concrete structure.

Thank you.

sunwater