

**sunwater**



# Irrigation Price Path

1 July 2025 to 30 June 2029

---

**Bowen Broken Rivers Water Supply Scheme**

27 April 2023

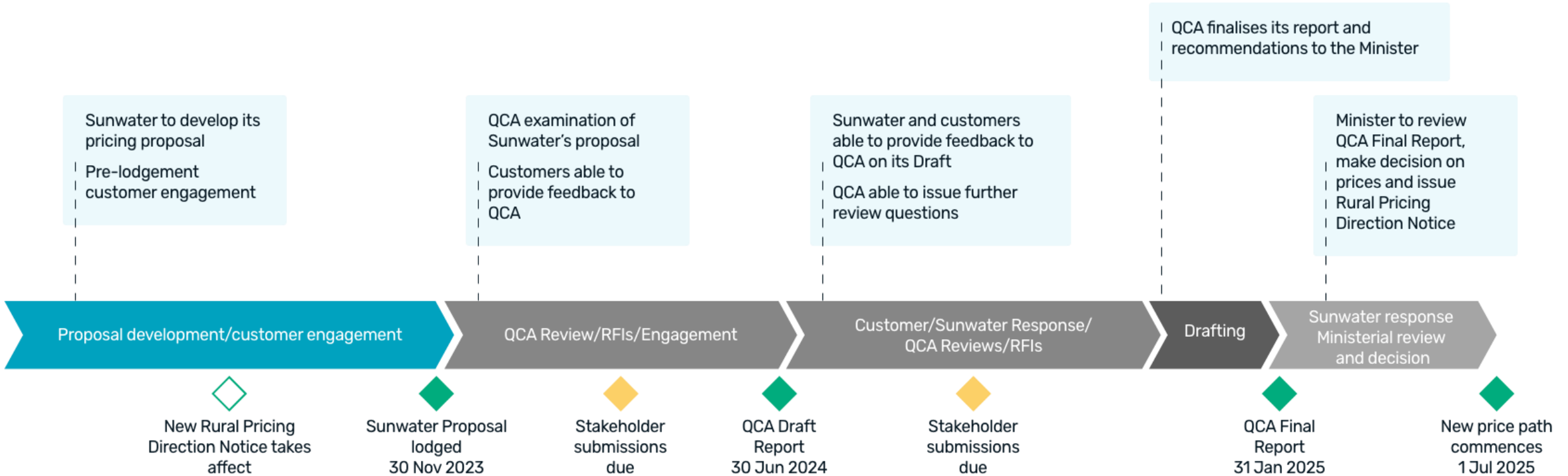
# Agenda

## Agenda items

Welcome Acknowledgement of Country	Daryl Conway	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

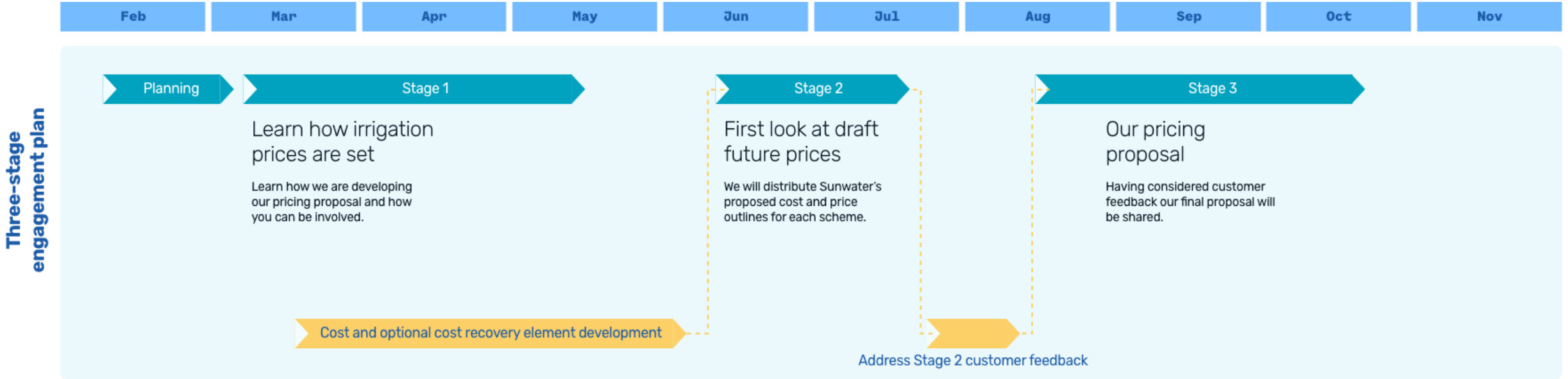
# Overview of the price path process

# Overview of the price path process



# What to expect from Sunwater

# What to expect from Sunwater



# Scheme Level Overview



# 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.

# Bowen Broken Rivers Water Supply Scheme

## Scheme Overview



38,930 ML in entitlements,  
with an average annual usage  
of 14,469 ML

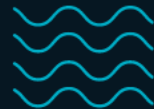


7 irrigation  
customers

## Major assets



Eungella Dam / Gattonvale Off-stream  
Storage & Bowen River Weir



Collinsville, Gattonvale (off-stream  
storage) and Eungella Lowlift pump  
stations generally servicing  
non-irrigation customers

## Key operations and maintenance activities



Dam and weir  
inspections



Corrective maintenance  
due to ageing assets



Infrastructure refurbishment  
e.g. guard valves and pumps

## 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

# Bowen Broken Rivers Water Supply Scheme

## Entitlements overview

Entitlements		Customer losses	Irrigation
High	33,254 ML	494 ML	0 ML
Medium	5,676 ML	0 ML	5,676 ML
<b>Total</b>	<b>38,930 ML</b>	<b>0 ML</b>	<b>5,676 ML</b>

## Pricing breakdown Medium priority (MP)

### Part A



### Part B



**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.

# Price setting process (2023-24 price example)

## Step 1

Allocate revenue by charge type

	Variable		Fixed		WAE Priority %		HUF %	
					High	85.4%	High	100.0%
Revenue offsets	0.0		100%	0.0	50%	0.0	50%	0.00
Operations - D	315.5	20% 63.10	80%	252.4	50%	126.2	50%	126.20
Operations - I	306.0		100%	306.0	50%	153.0	50%	153.01
Operations - IGEM	84.9				100%		100%	84.95
Maintenance - D	254.3	20% 50.86	80%	203.5	100%		100%	203.45
Maintenance - I	118.1				100%		100%	118.11
Insurance	194.5				100%		100%	194.47
Electricity	275.17	0.00% 0.00			100%		100%	275.17
Annuity	865.6				100%		100%	865.64
	2,414.18	113.97				279.2		2021.00

Key inputs	WAE	WAE%	Usage	HUF
High priority	33,254	85.4%		100.0%
Medium priority	5,676	14.6%		0.0%
Total	38,930		37.2%	
Customer losses	494			
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	0.01	=	33.57
Medium priority	x	0.00%	=	0.00
Variable	x	1.27%	=	1.45

## Step 3

Allocate revenue to priority group

	Revenue requirement by priority group	Losses	Revenue requirement after losses conversion	Entitlements	Usage %	
Part A - HP	$85.4\% \times 279.2 + 100.0\% \times 2,021.00 = 2,259.5$	33.57	$= 2,225.9$	$\times 1,000 / 32,760.00$		$= \$67.95$
Part A - MP	$14.6\% \times 279.2 + 0.0\% \times 2,021.00 = 40.71$	0.00	$= 40.71$	$\times 1,000 / 5,676.00$		$= \$7.17$
Part B	113.97	1.45	$= 112.52$	$\times 1,000 / [ 38,436.00 \times 37.2\% ]$		$= \$7.88$

## 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
<b>Part A</b> HP	\$50.71/ML + \$0.47/ML = \$51.19/ML		\$45.93	\$48.18	\$50.07	<b>\$51.19</b>	\$47.19	\$48.25	\$49.33	<b>\$50.44</b>
<b>Part A</b> MP	\$21.73/ML + \$0.47/ML = \$22.21/ML		\$19.99	\$20.92	\$21.72	<b>\$22.21</b>	\$20.50	\$20.96	\$21.42	<b>\$21.90</b>
<b>Part B</b>	\$4.02/ML + \$0.00/ML = \$4.02/ML		\$3.75	\$3.83	\$3.92	<b>\$4.02</b>	\$3.75	\$3.84	\$3.92	<b>\$4.01</b>

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

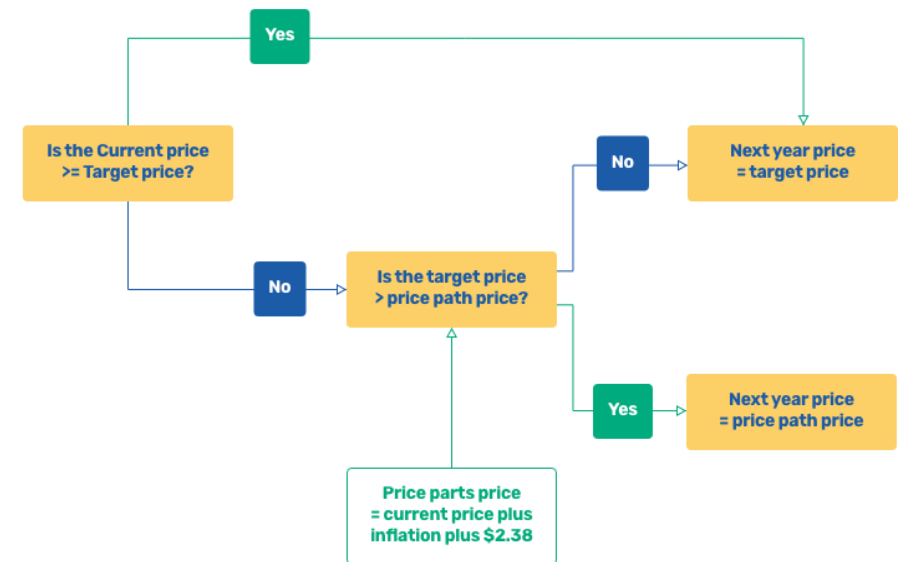
Customer prices are then set with reference to current prices, target prices and the pricing principles

	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
<b>Part A</b> HP	\$47.19	\$48.25	\$49.33	<b>\$50.44</b>	Not set	Not set	Not set	Not set	Not set
<b>Part A</b> MP	\$20.50	\$20.96	\$21.42	<b>\$21.90</b>	\$14.89	\$20.50	\$20.96	\$21.42	\$21.90
<b>Part B</b>	\$3.75	\$3.84	\$3.92	<b>\$4.01</b>	\$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 of the dam structure and some trees.

**Thank you.**

**sunwater**