

**sunwater**



# Irrigation Price Path

1 July 2025 to 30 June 2029

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**Barker Barambah Water Supply Scheme**

9 May 2023

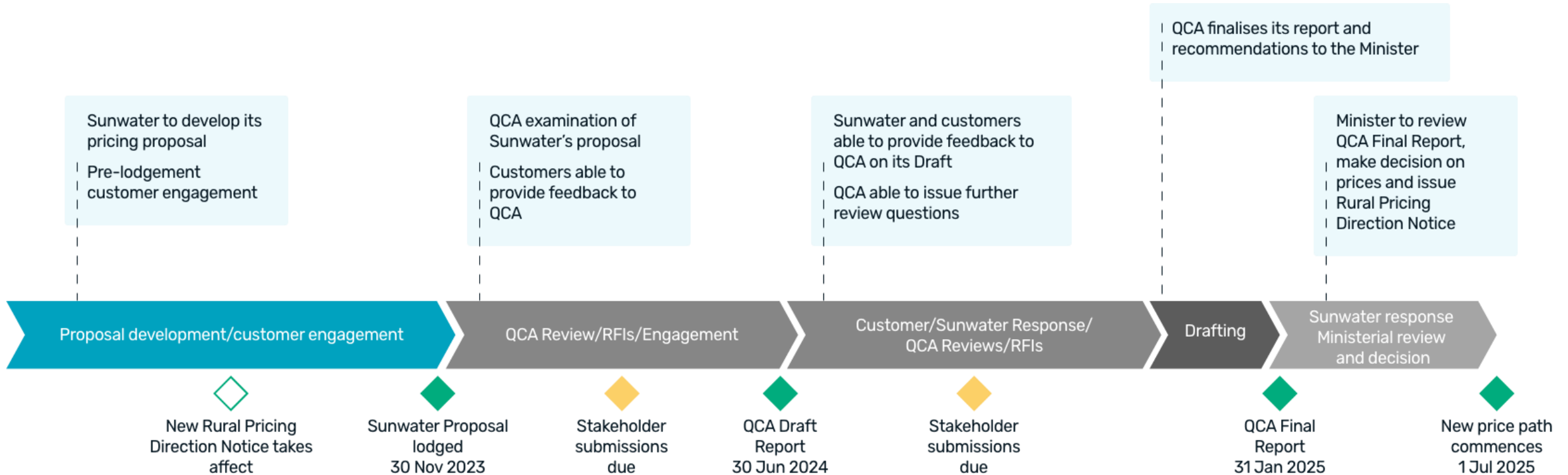
# Agenda

## Agenda items

Welcome Acknowledgement of Country	Andrew Maughan	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

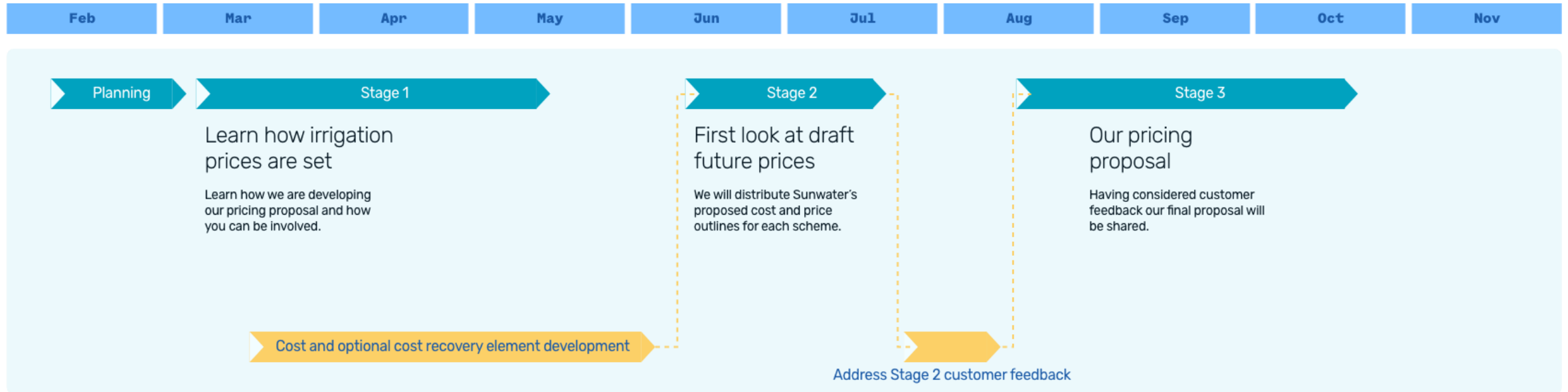
# Overview of the price path process



# What to expect from Sunwater

# What to expect from Sunwater

Three-stage  
engagement plan



# 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*
- ✓  $\text{Costs} \times \text{percentage} = \text{priority group revenue}$
- ✓ **Bucket 2**  
*Allocation by headworks utilization factor*
- ✓  $\text{Costs} \times \text{percentage} = \text{priority group revenue}$

## 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.

# Barker Barambah Water Supply Scheme

## Scheme Overview



34,315 ML in entitlements,  
with an average annual  
usage of 14,415 ML



150 irrigation customers

## Major assets



Bjelke-Petersen Dam



Joe Sippel Weir / Redgate  
Diversion Pipeline / Upper  
Redgate Relift Pipeline &  
Silverleaf Weir

## Key operations and maintenance activities



Stream gauging station  
replacements



Comprehensive dam  
and weir inspections



Infrastructure  
refurbishment e.g. valves



Electricity - Participant in  
Electricity cost pass-through



Corrective maintenance  
activities

## Pricing tariffs



Two tariff groups - Barker  
Barambah - River and  
Redgate Relift - each with  
fixed (Part A) and variable  
(Part B) charges.

# Barker Barambah

## Water Supply Scheme

### Entitlements overview

Entitlements	Scheme	Customer losses	Irrigation
High	2,236 ML	0 ML	0 ML
Medium	32,079 ML	0 ML	31,361 ML
<b>Total</b>	<b>34,315 ML</b>	<b>0 ML</b>	<b>31,361 ML</b>

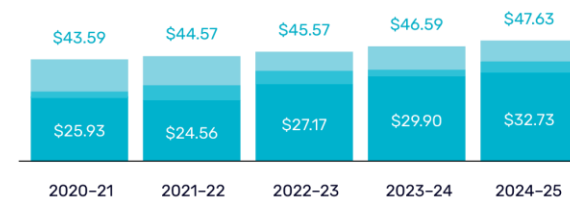
  

<i>Redgate Relift</i>			
Entitlements	Scheme	Customer losses	Irrigation
Medium	1,642 ML	0 ML	1,642 ML

## Pricing breakdown Medium priority (MP)

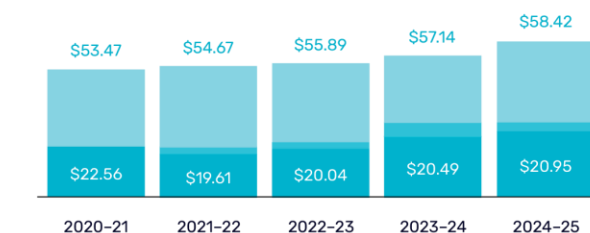
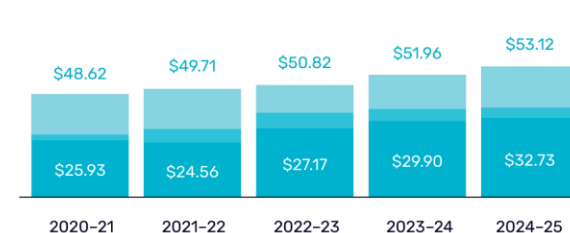
### Part A

#### Barker Barambah - River



### Part B

#### Barker Barambah - Redgate 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 %
Revenue offsets	-3.6		100% -3.6	High 6.5%	High 28.0%
Operations - D	266.0	20% 53.21	80% 212.8	50% -1.8	50% -1.78
Operations - I	312.8		100% 312.8	50% 106.4	50% 106.42
Operations - IGEM	97.6			50% 156.4	50% 156.40
Maintenance - D	62.8	20% 12.56	80% 50.3		100% 97.64
Maintenance - I	74.6				100% 50.25
Insurance	278.3				100% 74.63
Electricity	0.00	0.00% 0.00			100% 278.34
Annuity	1,148.8				100% 0.00
	2,237.46	65.77		261.0	1910.65

Key inputs	WAE	WAE%	Usage	HUF
High priority	2,236	6.5%		28.0%
Medium priority	32,079	93.5%		72.0%
Total	34,315		42.0%	
Customer losses	0			
Sub-scheme splits	0			

## Step 2

Allocate fixed revenue to priority group allocation buckets

	WAE Priority %	HUF %
High	6.5%	28.0%
Medium	93.5%	72.0%

Distribution losses				
Calculated in bulk scheme and picked up in distribution system				
High priority	x	0.00	=	0.00
Medium priority	x	0.00%	=	0.00
Variable	x	0.00%	=	0.00

## Step 3

Allocate revenue to priority group

	Revenue requirement by priority group	Losses	Revenue requirement after losses conversion	Entitlements	Usage %
Part A - HP	$6.5\% \times 261.0 + 28.0\% \times 1,910.65 = 552.0$	- 0.00	$= 552.0 \times 1,000 / 2,236.00$		$= \$246.87$
Part A - MP	$93.5\% \times 261.0 + 72.0\% \times 1,910.65 = 1,619.69$	- 0.00	$= 1,619.69 \times 1,000 / 32,079.00$		$= \$50.49$
Part B	65.77	- 0.00	$= 65.77 \times 1,000 / [ 34,315.00 \times 42.0\% ]$		$= \$4.56$

## 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

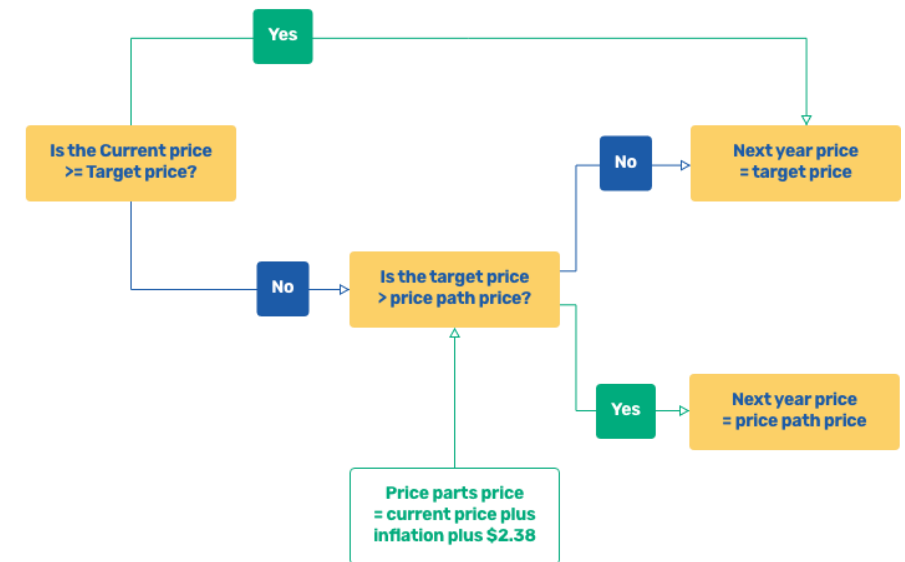
Customer prices are then set with reference to current prices, target prices and the pricing principles

	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**