

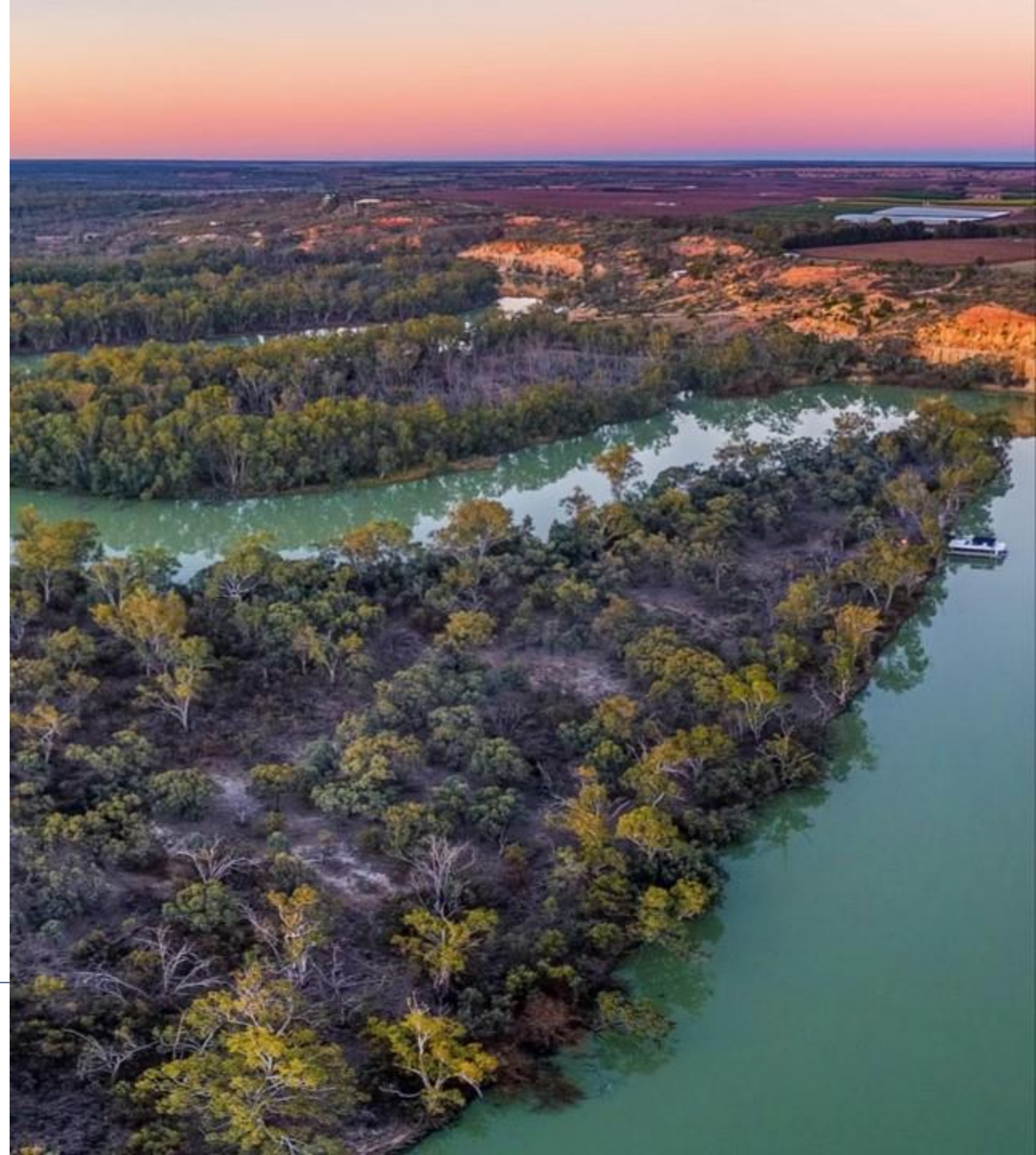
LMW Growers Conference

Water Market Update

Aither

Benjamin Williams

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Acknowledgement of Country

Aither acknowledge Aboriginal and Torres Strait Islander people as the First Peoples of Australia and the Traditional Custodians of its lands and waters. We pay respect to the deep connection Aboriginal and Torres Strait Islander people hold with Country, and celebrate the continuing effect of cultural knowledge and practices on Country and communities across Australia.

We pay our respect to Elders past and present, whose knowledge and leadership has protected Country and allowed Aboriginal spirituality, culture and kinship to endure through the ages.

We recognise the injustices and hardship faced by Aboriginal communities and reflect on opportunities for all Australians to play a part in reconciliation and the development of mutual understanding and respect across cultures.

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Agenda

Water Market Update



Basin Plan Implementation



Possible Water Availability Impacts



Potential Water Market Outcomes



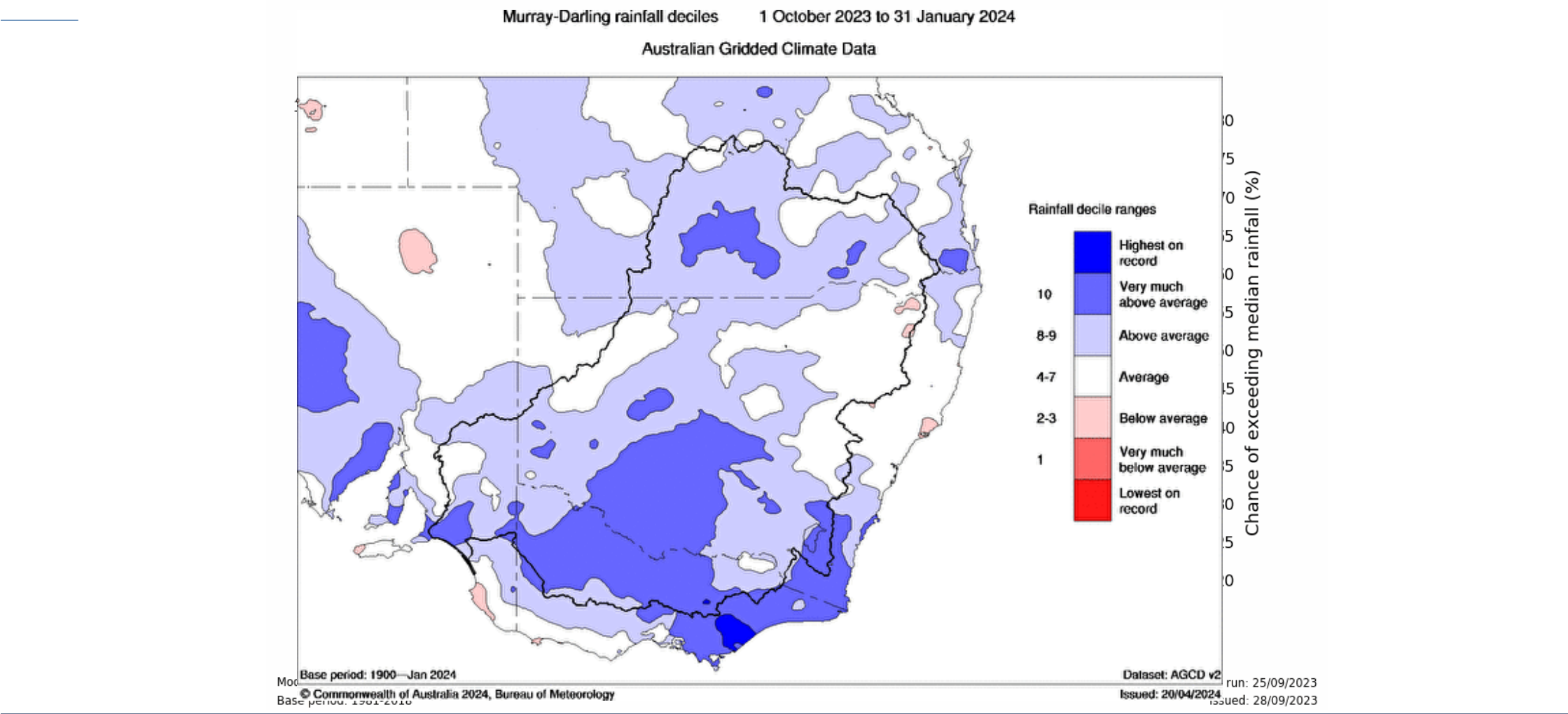
Water market update

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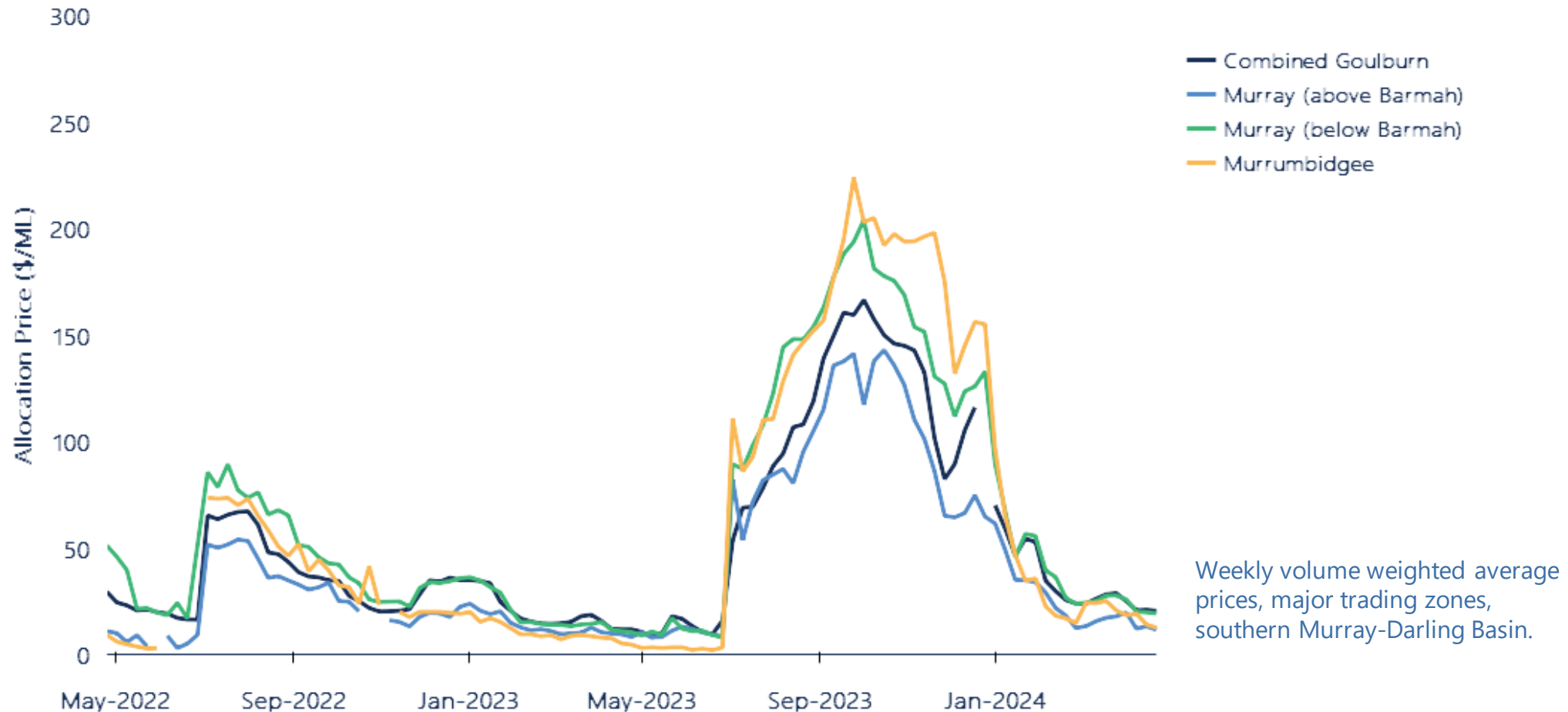
El Niño forecast drove market behaviour

Everyone can be an expert in hindsight



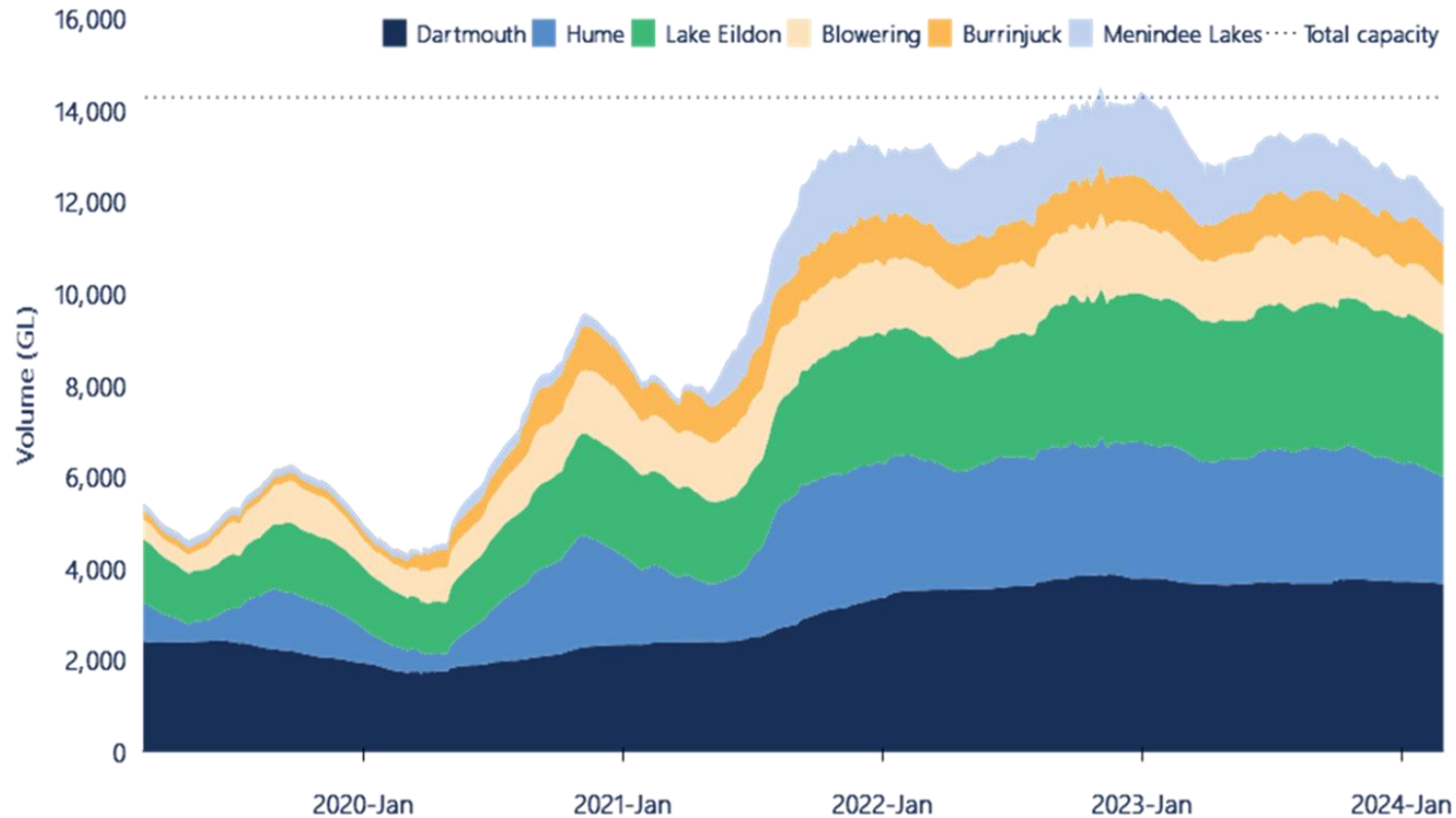
Allocation markets: Weekly volume weighted average prices

The first sign of rain saw markets plummet.



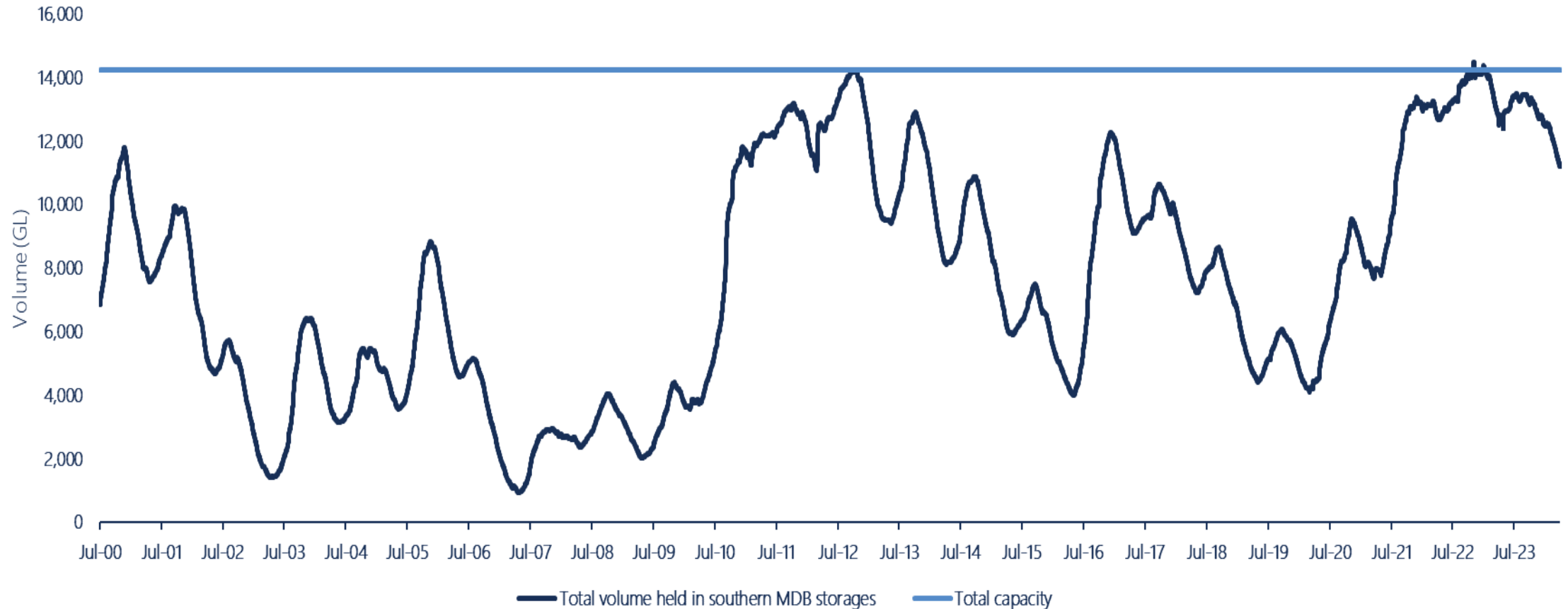
Southern Murray-Darling Basin storage volumes

Storage volumes remain in strong position at end of the summer irrigation period.



Southern MDB storages

Drawdown increased this year, but is still below average



Entitlement markets

A mix of upward and downward pressure has driven price volatility.



Rising interest rates



Poor trading conditions



Challenging commodity prices



Economic uncertainty

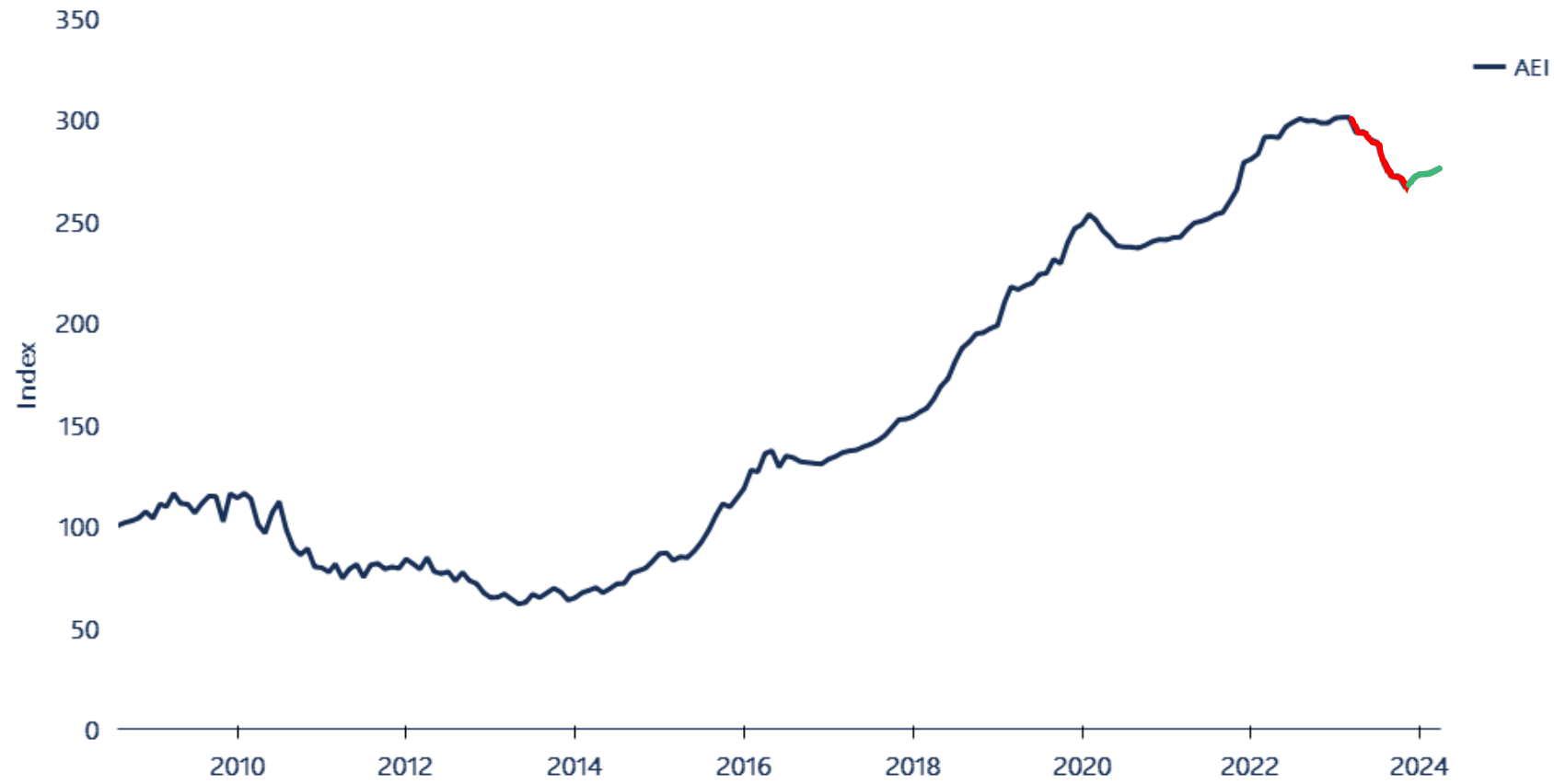
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Basin Plan recovery
(potential buybacks)

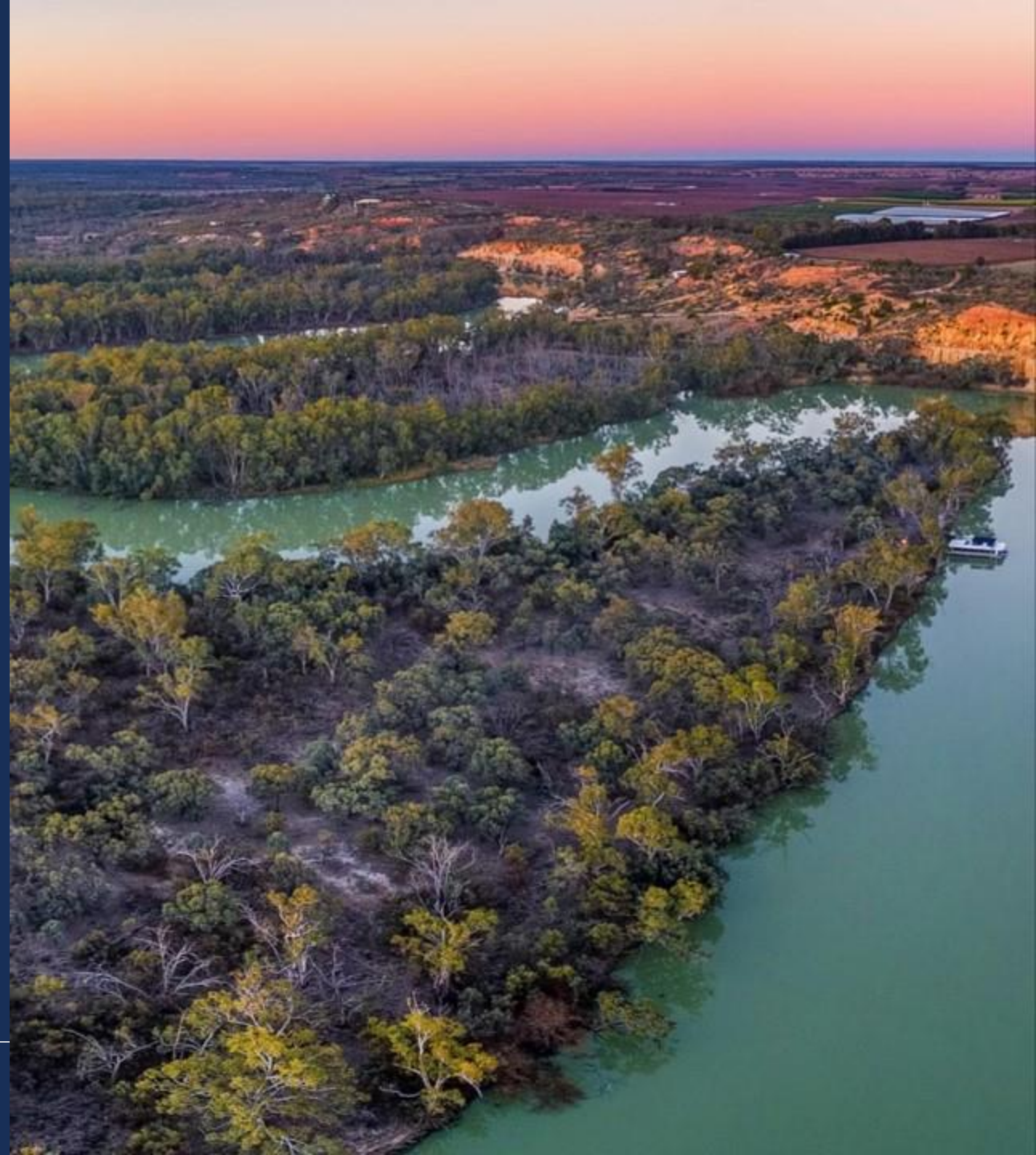
Aither Entitlement Index

Economic conditions influence



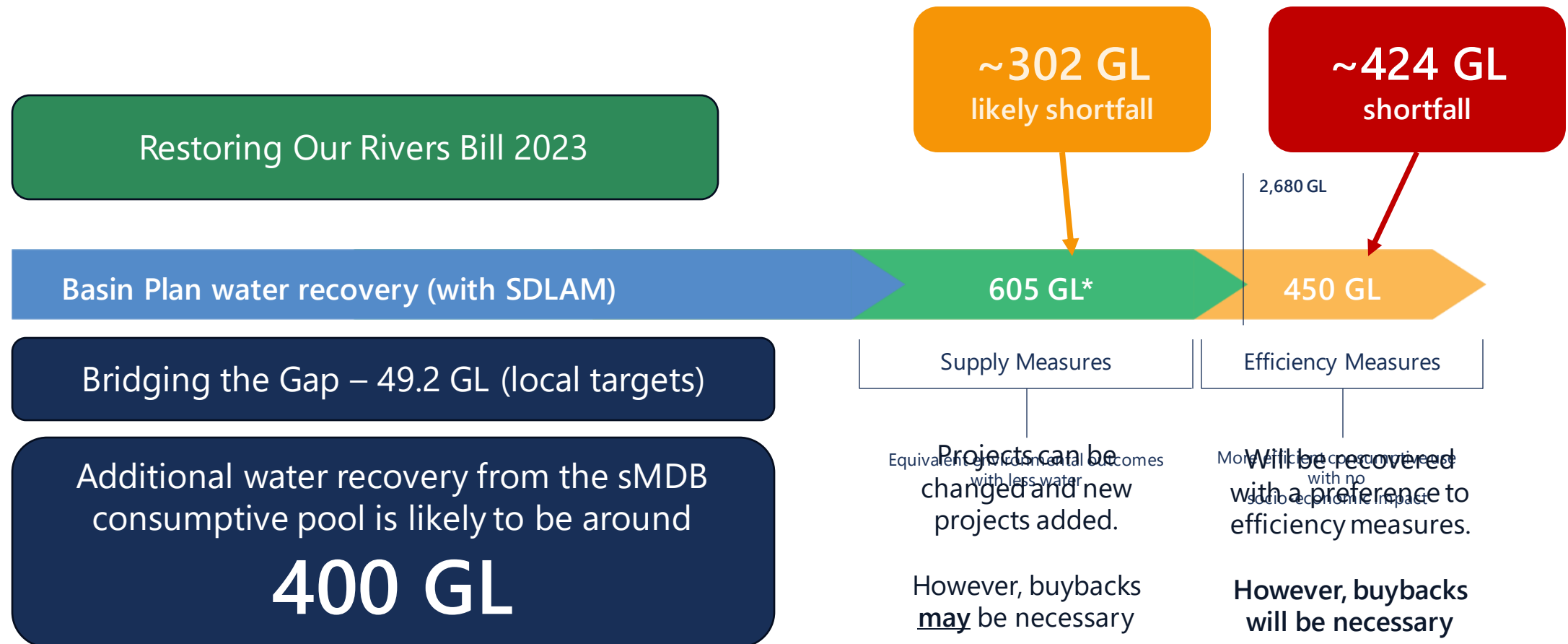
Basin Plan background

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Basin Plan background and Restoring our Rivers Updates

Why buybacks are making a comeback



Bridging the Gap buybacks

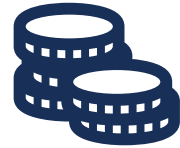
What we know so far

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Volumes recovered

The Commonwealth have recovered 26.25GL of water towards the Bridge the Gap to Sustainable Diversion Limits, successfully bridging the gap in the Lachlan, Namoi and NSW Murray.



Accepted offers

The government are forecasting the total cost of the water recovery at \$205 million. Aither intelligence and market data suggest that offers were accepted at 10-30% above market price.

Known prices paid by the Commonwealth include:

- Lachlan GS: \$1,850 (500ML)
- NSW Lower Namoi GS: \$7,500 (515ML)
- NSW Upper Namoi GS: \$9,100-\$9,500 (51ML)
- NSW Murray 10 GS: \$1,950-\$2,200



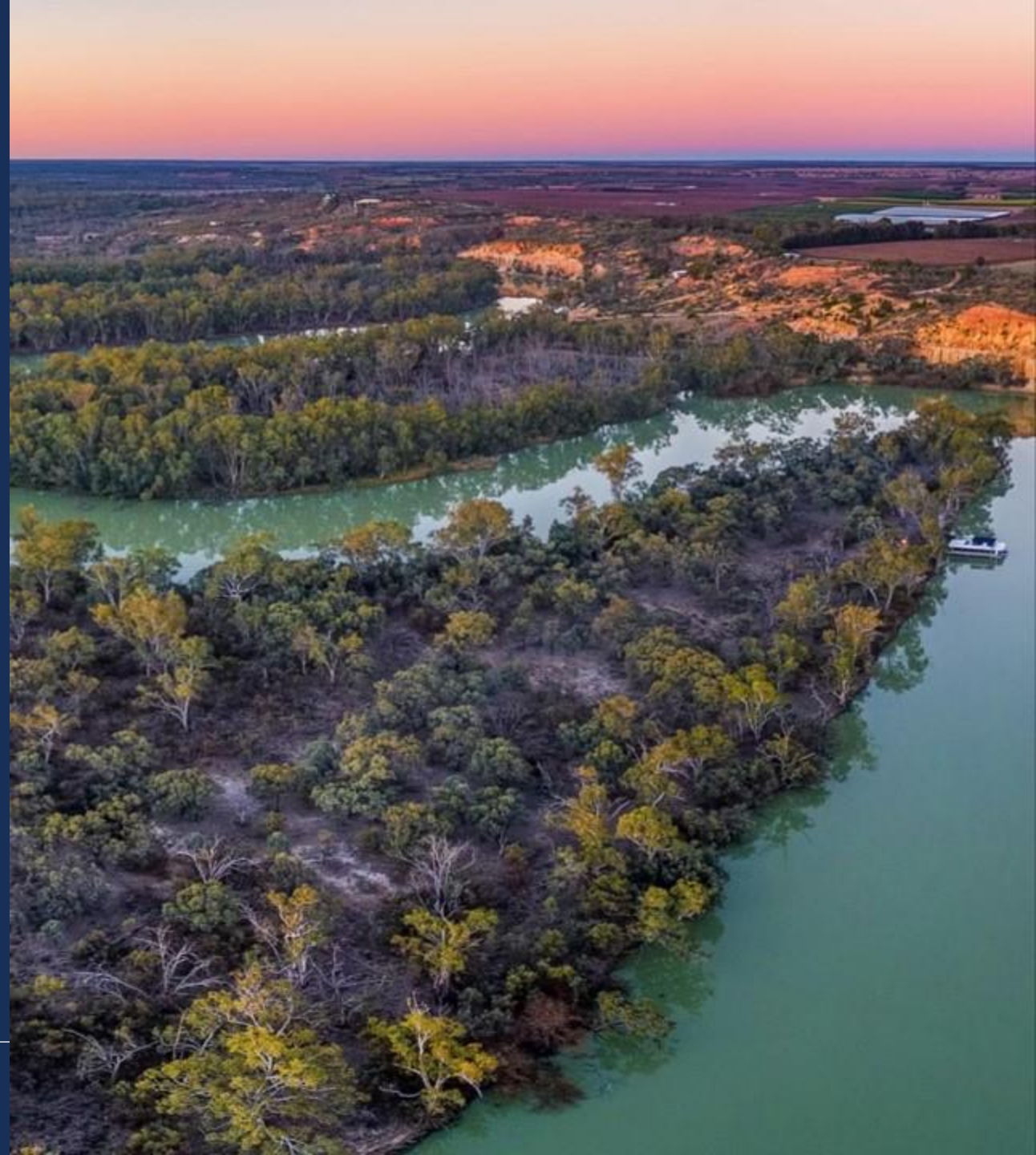
Looking forward

DCCEEW are continuing to work with Queensland, NSW and ACT governments on water recovery options to recover the remaining 18.05GL towards the target.

How could government buybacks influence water markets in the medium term (3-5 years)?

- Medium term effects on entitlement and allocation markets
- Supply of water available based on seasonal variations

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Medium-Long term effects on allocation markets

ABARES forecast that median allocation prices could increase by 28% in response to a government buyback.

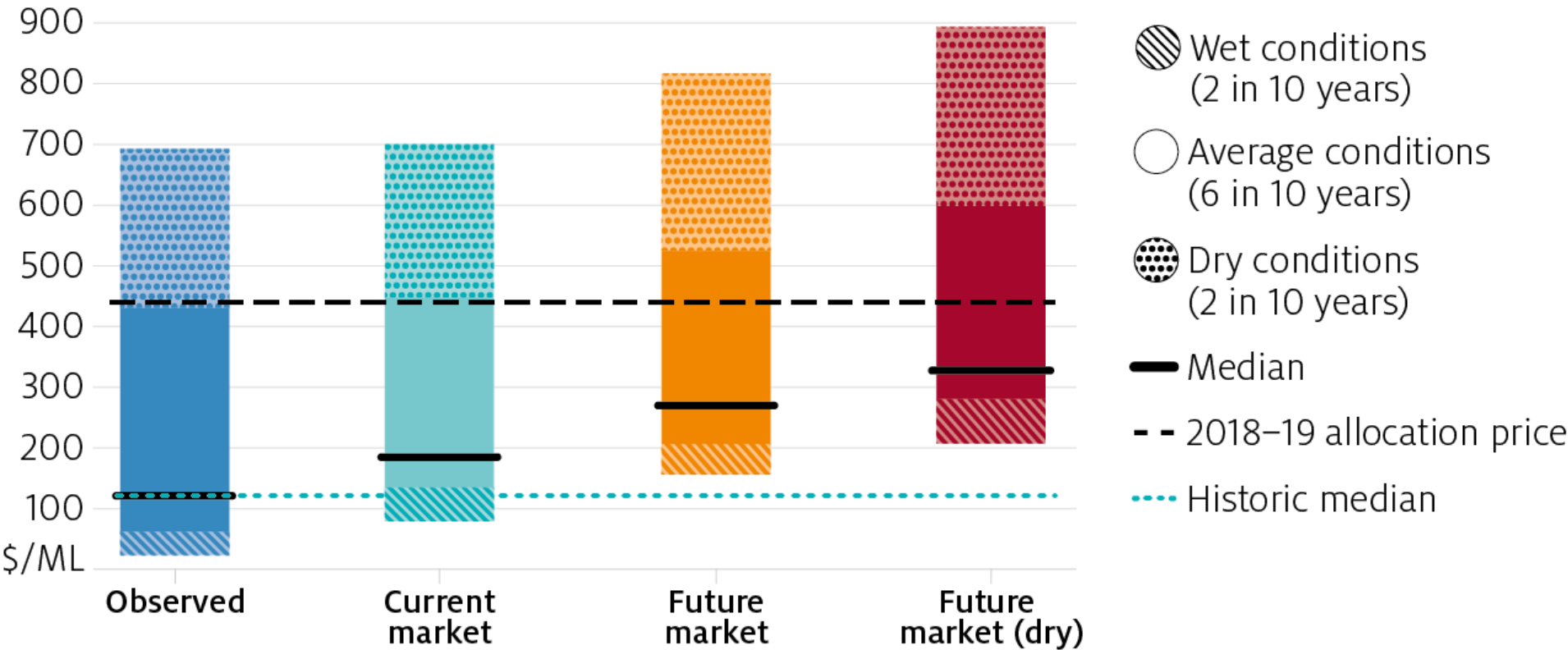


Figure: Weighted water allocation price by scenario, southern Murray-Darling Basin – ABARES, 2020

Connected Murray supply and demand based on projected growth in permanent horticulture

Risk mitigation tools like carryover are needed to improve water availability in droughts.

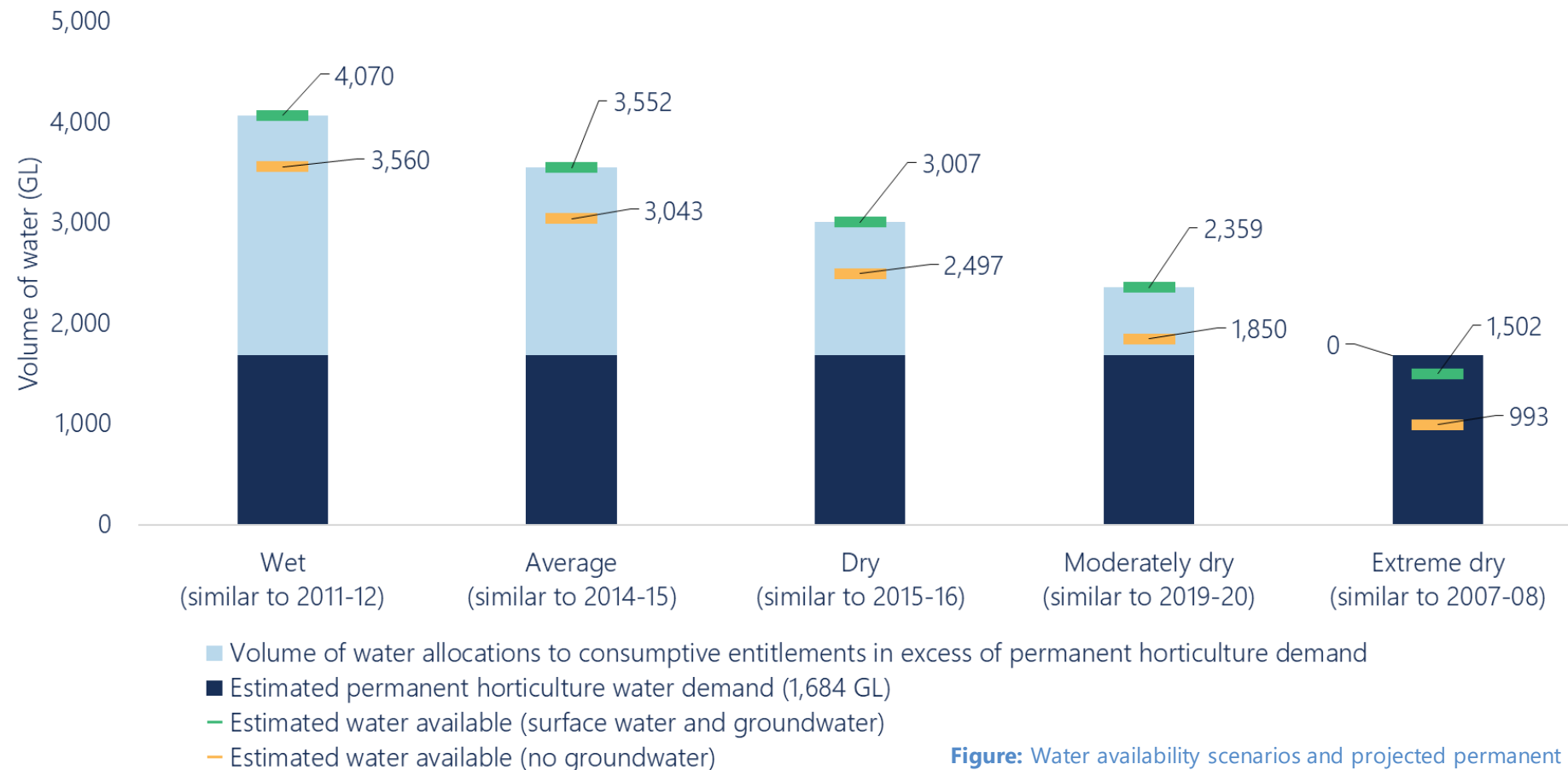


Figure: Water availability scenarios and projected permanent horticulture water demand (permanent plantings at full maturity), connected Murray region.

How can a future government buyback be contextualised within the current total entitlement of issue?

Achieving a 450 GL recovery target could reduce the current southern Murray-Darling Basin consumptive pool by approximately 10%.

Environmental volumes recovered to date represent around 27% of total entitlement on issue (major southern MDB entitlements only) (figure on the right).

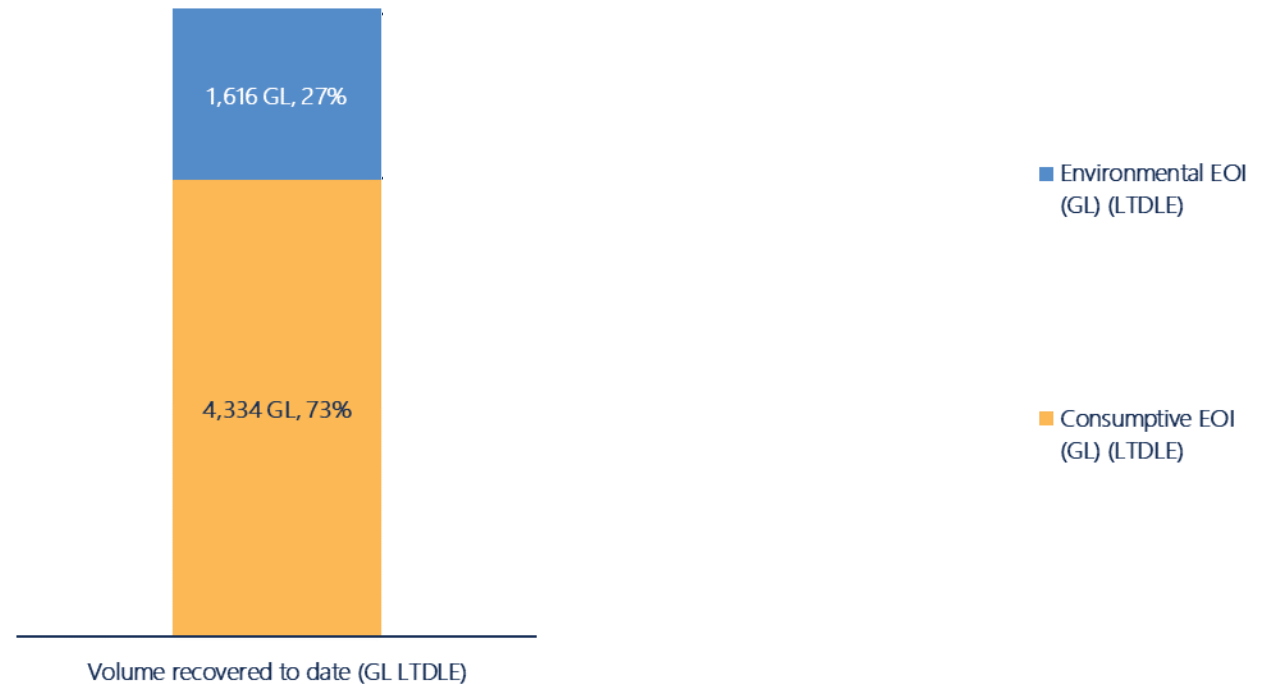


Figure: Southern Murray-Darling Basin water volumes recovered before and after the 450 GL target (consumptive and environmental holdings). LTDLE refers to long-term diversion equivalence factors and is an accounting tool to track how much water has been recovered for the environment

Impact on water availability – lower Murray

450 GL water recovery in the southern MDB proportionate to entitlement on issue

Volume of water available (lower Murray)	WET (similar to 2011-12)	Average (similar to 2014-15)	DRY (similar to 2015-16)	Moderately DRY (similar to 2019-20)	Extreme DRY (similar to 2007-08)
Baseline	1594 GL	1460 GL	1364 GL	1067 GL	473 GL
450 GL recovery	1442 GL	1319 GL	1233 GL	964 GL	425 GL
Difference (GL)	-152	-141	-131	-102	-48
Difference (%)	-9.5%	-9.7%	-9.6%	-9.6%	-10.2%

Conclusions

Basin Plan

- Buybacks will commence this calendar year
- Recovery will likely be focused on the Southern Basin
- What type of entitlements and where they are recovered will determine the market impact.
- A reduction in the consumptive pool will likely have an inflationary impact on allocation prices, especially in drought conditions.

2024-25 Water Year

- Southern MDB storage levels are healthy, and water supply is likely to be strong
- Forward market activity suggests September allocation prices between \$100 and \$150 /ML in the lower Murray
- If we go into another La Niña – allocation prices could fall dramatically. Neutral conditions will likely see allocation prices between \$120 and \$180 / ML.

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Citation

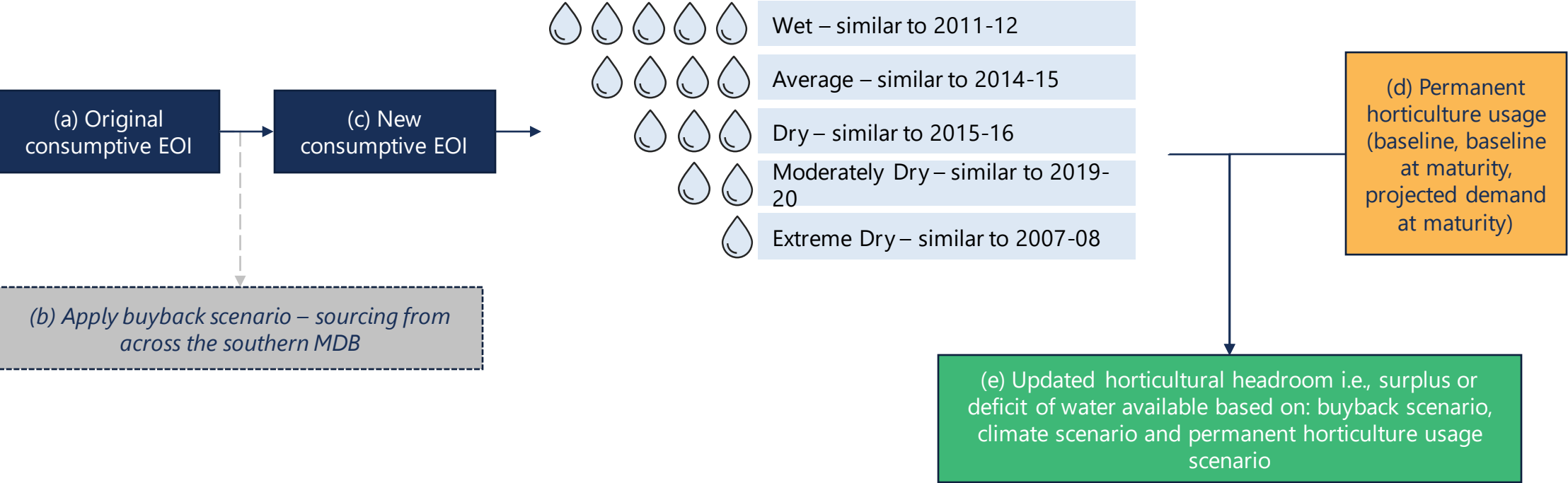
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How did the updated analysis work?

Per the figure below, Aither applied the new consumptive entitlement on issue figures from the recovery scenarios across the five climate scenarios. This was then compared to estimated permanent horticultural usage to determine the surplus or deficit of water available.

Figure: Aither's approaching to updating its 2022 supply and demand analysis.



Impact on water availability – lower Murray

Based on water recovery across the whole southern MDB.

Table: Water availability in the lower Murray

	Wet (similar to 2011-12)	Average (similar to 2014-15)	Dry (similar to 2015-16)	Moderately Dry (similar to 2019-20)	Extreme dry (similar to 2007-08)
Volume of water available (lower Murray)					
Baseline	1,594 GL	1,460 GL	1,364 GL	1,067 GL	473 GL
sMDB Low End 232GL	1,516 GL	1,387 GL	1,296 GL	1,014 GL	448 GL
sMDB High End 327GL	1,493 GL	1,366 GL	1,276 GL	998 GL	441 GL
sMDB 450GL	1,442 GL	1,319 GL	1,233 GL	964 GL	425 GL
sMDB Low End + 450GL	1,364 GL	1,246 GL	1,165 GL	911 GL	400 GL
sMDB High End + 450GL	1,341 GL	1,225 GL	1,145 GL	896 GL	393 GL
Volume difference from Baseline (lower Murray)					
Baseline					
sMDB Low End 232GL	-79 GL	-73 GL	-68 GL	-53 GL	-25 GL
sMDB High End 327GL	-102 GL	-94 GL	-88 GL	-69 GL	-32 GL
sMDB 450GL	-152 GL	-141 GL	-131 GL	-102 GL	-48 GL
sMDB Low End + 450GL	-230 GL	-214 GL	-199 GL	-155 GL	-73 GL
sMDB High End + 450GL	-253 GL	-235 GL	-219 GL	-171 GL	-81 GL
% difference from Baseline					
Baseline					
sMDB Low End 232GL	-4.9%	-5.0%	-5.0%	-5.0%	-5.3%
sMDB High End 327GL	-6.4%	-6.5%	-6.4%	-6.4%	-6.8%
sMDB 450GL	-9.5%	-9.7%	-9.6%	-9.6%	-10.2%
sMDB Low End + 450GL	-14.4%	-14.7%	-14.6%	-14.6%	-15.5%
sMDB High End + 450GL	-15.9%	-16.1%	-16.0%	-16.0%	-17.0%

When applied to the lower Murray, this translates to a reduction of as much as 253 GL in wet years and 219 GL in dry years (High end + 450 GL scenario)

Similar to before, the volume reductions are higher in wet years, when a higher % of water is allocated

However, the percentage drop is more pronounced in the lower Murray with up to 17% less water available in extreme dry years (high end + 450 GL scenario)

Current Commonwealth holdings

Southern MDB

Entitlement	LTDLE	Total Entitlement on Issue (GL)	Total Entitlement on Issue (GL) (LTDLE)	CEWH holdings (GL)	CEWH holdings (GL) (LTDLE)	Total EOI LTDLE weighting	CEWH LTDLE weighting	Overweight or underweight?	CEWH vs Total EOI (LTDLE) weighting difference
SA Murray HS	0.8820	608.00 GL	536.26 GL	162.27 GL	143.12 GL	8.29%	9.68%	OVER	1.4%
Vic 6 Murray HRWS	0.9740	316.92 GL	308.68 GL	105.15 GL	102.42 GL	4.77%	6.92%	OVER	2.2%
Vic 6 Murray LRWS	0.5430	130.06 GL	70.62 GL	14.48 GL	7.86 GL	1.09%	0.53%	UNDER	-0.6%
Vic 7 Murray HRWS	0.9740	928.21 GL	904.08 GL	257.21 GL	250.52 GL	13.97%	16.94%	OVER	3.0%
Vic 7 Murray LRWS	0.5430	176.69 GL	95.94 GL	20.93 GL	11.37 GL	1.48%	0.77%	UNDER	-0.7%
Vic 1A Goulburn HRWS	0.9670	945.08 GL	913.89 GL	318.56 GL	308.04 GL	14.12%	20.82%	OVER	6.7%
Vic 1A Goulburn LRWS	0.5830	419.95 GL	244.83 GL	42.47 GL	24.76 GL	3.78%	1.67%	UNDER	-2.1%
NSW 10 Murray GS	0.6990	1301.24 GL	909.56 GL	304.85 GL	213.09 GL	14.06%	14.41%	OVER	0.3%
NSW 10 Murray HS	0.8730	22.81 GL	19.91 GL	0.00 GL	0.00 GL	0.31%	0.00%	UNDER	-0.3%
NSW 11 Murray GS	0.6990	372.86 GL	260.63 GL	64.78 GL	45.28 GL	4.03%	3.06%	UNDER	-1.0%
NSW 11 Murray HS	0.8730	166.89 GL	145.70 GL	17.86 GL	15.59 GL	2.25%	1.05%	UNDER	-1.2%
NSW Murrumbidgee GS	0.5910	1891.99 GL	1118.17 GL	286.47 GL	169.30 GL	17.28%	11.45%	UNDER	-5.8%
NSW Murrumbidgee HS	0.9770	364.28 GL	355.90 GL	14.18 GL	13.85 GL	5.50%	0.94%	UNDER	-4.6%
NSW Lower Darling GS	0.7340	79.50 GL	58.36 GL	21.56 GL	15.83 GL	0.90%	1.07%	OVER	0.2%
NSW Lower Darling HS	0.9310	7.77 GL	7.23 GL	4.23 GL	3.94 GL	0.11%	0.27%	OVER	0.2%
NSW 10 Murray Supplementary Water	0.7030	90.98 GL	63.96 GL	0.08 GL	0.05 GL	0.99%	0.00%	UNDER	-1.0%
NSW 11 Murray Supplementary Water	0.7030	161.60 GL	113.61 GL	0.14 GL	0.09 GL	1.76%	0.01%	UNDER	-1.7%
NSW Murrumbidgee Supplementary Water	0.3770	198.78 GL	74.94 GL	21.99 GL	8.29 GL	1.16%	0.56%	UNDER	-0.6%
NSW Murrumbidgee Supplementary Water (Lowbidgee)	0.3587	747.00 GL	267.92 GL	406.62 GL	145.84 GL	4.14%	9.86%	OVER	5.7%
TOTALS		8930.61 GL	6470.19 GL	2063.82 GL	1479.26 GL	100.00%	100.00%		

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