



economics  
public policy  
markets  
strategy

MARSDEN JACOB ASSOCIATES  
C E L E B R A T I N G



*Talks Live*

**Simplifying Water Markets**

A Marsden Jacob Presentation

MARSDEN JACOB ASSOCIATES

C E L E B R A T I N G



*Talks Live*



The **Marsden Jacob Talks Live** webinar series brings people together to discuss pressing issues across environment, energy, water, waste and recycling, agriculture and earth resources and other sectors in Australia and internationally.

These free webinars are open to everyone. We aim to share best practices and bring the latest research and thinking to a broad audience.

Our focus in these events is on encouraging open, positive and collaborative discussion amongst webinar participants.

We encourage you to come with questions, opinions, experiences, and interests you can share. We also welcome your thoughts on future topics for our webinar series.

Each live event includes a presentation, followed by an open discussion between webinar participants.

MARSDEN JACOB ASSOCIATES

Talks Live - Water Markets



# Who are we?

## Rod Carr

Director

MEnSt (Macq.), BEc (Syd.)



### Contact

+61 418 765 393

+61 3 8808 7400

[rcarr@marsdenjacob.com.au](mailto:rcarr@marsdenjacob.com.au)

<https://www.linkedin.com/in/rob-carr-a6b6a920/>

## Stuart Maclachlan

Senior Consultant

MSE, BLandWatSc (Syd.)



### Contact

+61 412 552 707

+61 3 8808 7400

[smaclachlan@marsdenjacob.com.au](mailto:smaclachlan@marsdenjacob.com.au)

<https://www.linkedin.com/in/stuart-maclachlan-4008b859/>



## In today's Talks Live we're going to cover:

Key water trading  
terms, including  
entitlements and  
reliability

Water market  
trading

Risk  
considerations  
for market  
participants

What's been  
happening in  
the market?

What's the  
outlook?

## In today's Talks Live we're going to cover:

Key water trading  
terms, including  
entitlements and  
reliability

Water market  
trading

Risk  
considerations  
for market  
participants

What's been  
happening in  
the market?

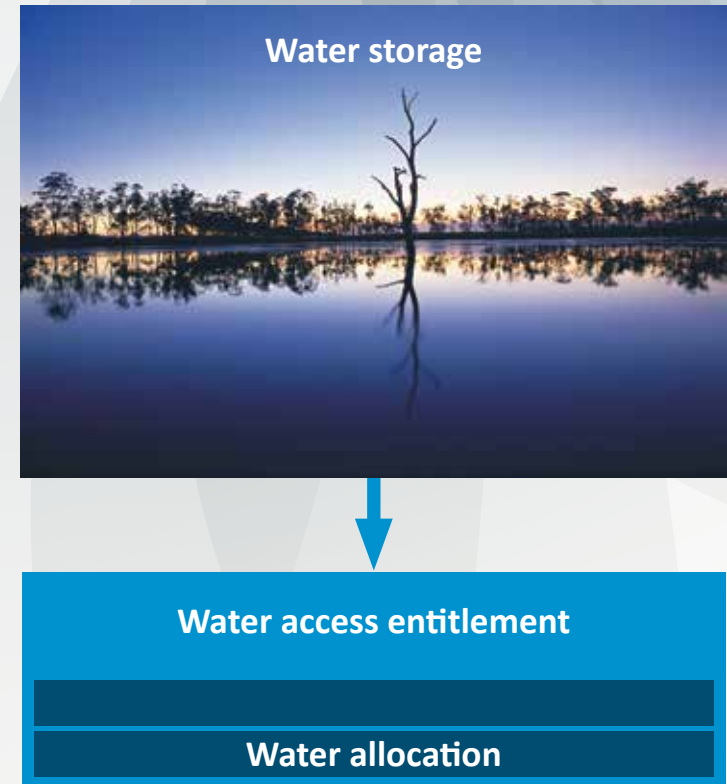
What's the  
outlook?

# There are three main components to a water licence

**Water access entitlement** - the ongoing right to access a share of water from a specified resource.

**Water allocation** - the actual amount of water available under water access entitlements in a given season.

**Reliability** - the frequency with which water allocated under a water access entitlement is able to be supplied in full.



# Water market terminology varies between States

Term	SA	VIC	NSW	QLD
<b>Water Entitlement</b>	Water Access Entitlement	Water Share (WEE)	Water Access Licence (WAL)	Water Allocation (unbundled)/Water Licence (bundled)
<b>Water Allocation</b>	Allocation	Seasonal Determination	Available Water Determination	Announced Allocation/ Announced Entitlement
<b>Permanent Transfer</b>	Water Access Entitlement Transfer	Water Share Transfer	Share Assignment	Water Allocation Transfer/Water Licence Relocation
<b>Temporary Transfer</b>	Water Allocation Transfer	Water Allocation Trade	Water Allocation Assignment	Seasonal Assignment
<b>Regulated Water Source</b>	Prescribed Water Source	Regulated	Regulated	Supplemented
<b>Unregulated Water Source</b>	Prescribed Water Source	Unregulated	Unregulated	Unsupplemented
<b>Regulated Entitlement types</b>	Class 1, Class 3 (High Security), Class 5 etc.	High and Low Reliability	High and General Security	High and Medium Priority



# For water users who operate within an irrigation network (or IIO), different terminology is used

**Irrigation right** - a person's right against an IIO to receive water, which is not a water access right or a water delivery right. However, it generally has the identical characteristics of the equivalent water access right. For example, in Murray Irrigation, their irrigation right has the same characteristics as a NSW Murray zone 10 entitlement.

**Delivery right/water delivery right** - a right to have water delivered by an infrastructure operator. It typically represents the holder's right of access to an irrigation network.

**Transformation** - process by which an irrigator permanently transforms their entitlement to water under an irrigation right against an Irrigation Infrastructure Operator (IIO).



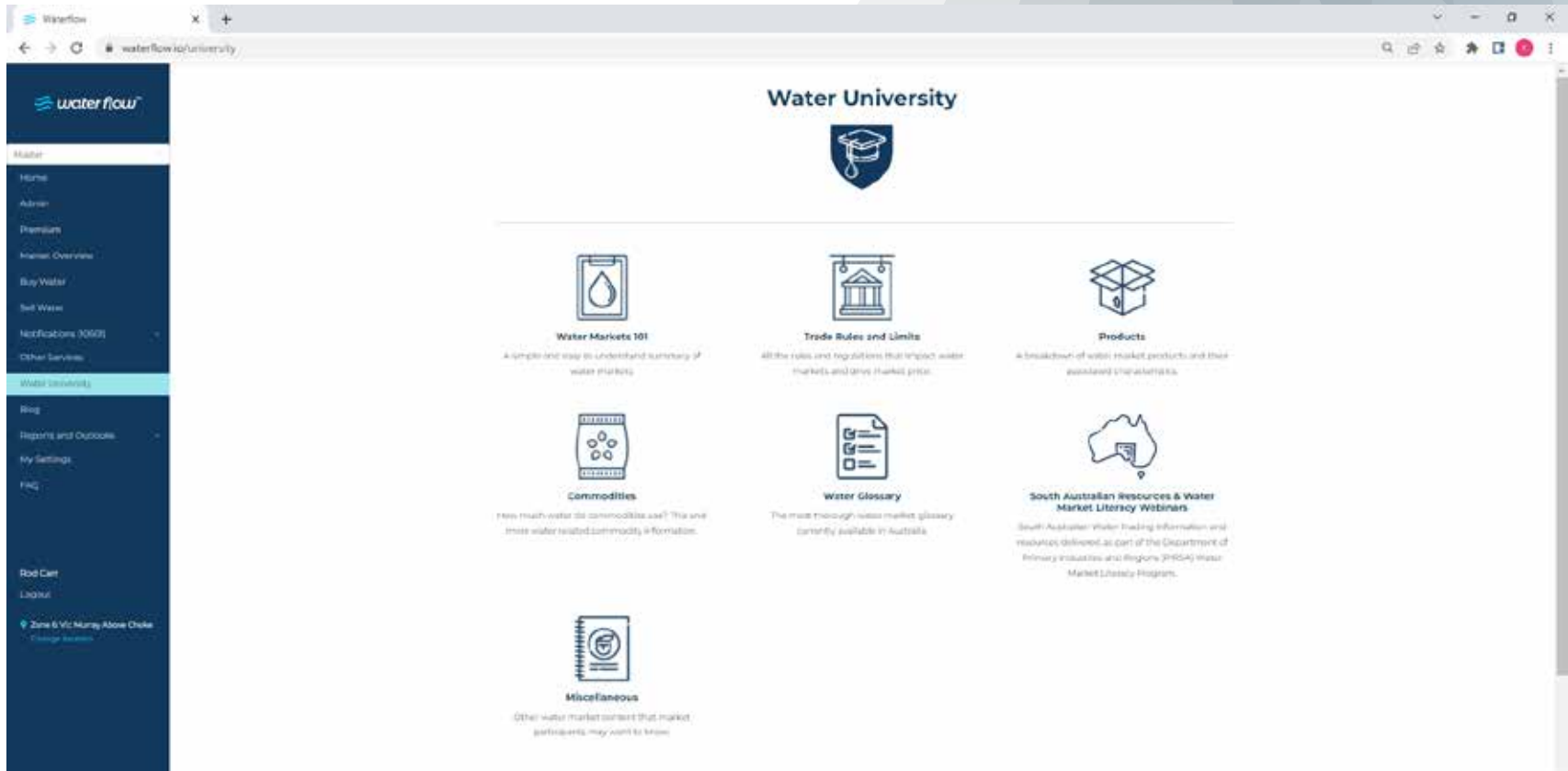


# Carryover capacity vary across States and entitlement type

- **Carryover:** The option to hold in storage a portion of unused seasonal allocations for use at a later date.
- **NSW HS entitlements** will receive a 95/97% allocation on 1 July in all but extreme dry years (Millennium Drought).

Zone	Class		
	High Security / Reliability	Low Reliability	General Security
1A Greater Goulburn	100%	100%	-
2 Broken	50%	-	-
3 Lower Goulburn	100%	100%	-
4A Campaspe	100%	100%	-
4C Lower Campaspe	100%	100%	-
5A Loddon	50%	50%	-
6 Vic Murray Above Choke	100%	100%	-
6B Lower Broken Creek	100%	100%	-
7 Vic Murray Below Choke	100%	100%	-
10 NSW Murray Above Choke	0%	-	50%
11 NSW Murray Below Choke	0%	-	50%
12 SA Murray	20%	-	-
13 Murrumbidgee	0%	-	30%
14 Lower Darling	0%	-	50%

# Lots more terminology



If there are other terms that have you mystified then have a look at the Glossary in the Waterflow – Water University

## In today's Talks Live we're going to cover:

Key water trading  
terms, including  
entitlements and  
reliability

Water market  
trading

Risk  
considerations  
for market  
participants

What's been  
happening in  
the market?

What's the  
outlook?



# Who trades water?



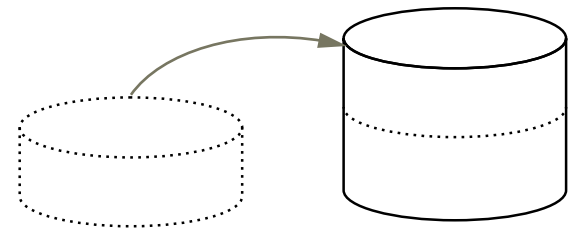
# There are two main water market products

## Permanent (Entitlement) Water Trade

- The trade of an annual entitlement to access allocation within a water system in perpetuity.
- The analogy of a property sale is often applied to this type of water trade.
- Also called a Water Entitlement Trade.

### Entitlement Trade

In an Entitlement Trade all or part of a water entitlement is permanently transferred from a seller to a buyer.

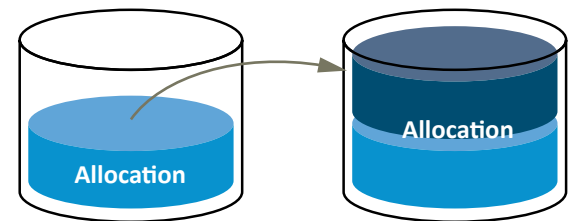


## Temporary Water Trade

- The trade of a specified volume water from one entity to another, which must be used within a water year (by June 30). In some instances, it can also be set aside for carryover purposes.
- The analogy of a property lease is often applied to this type of water trade.
- Also called a Water Allocation Trade.

### Allocation Trade

In an Allocation Trade a volume of water allocation is transferred from a seller to a buyer on a temporary basis for the water year.



# Secondary water market products are also developing

## Entitlement Lease

An Entitlement Holder (**Lessor**) transfers complete access to the Entitlement to a second party (**Lessee**) for a specified period of time - one or more water years. At the end of that period, the access to the Entitlement returns to the Lessor.

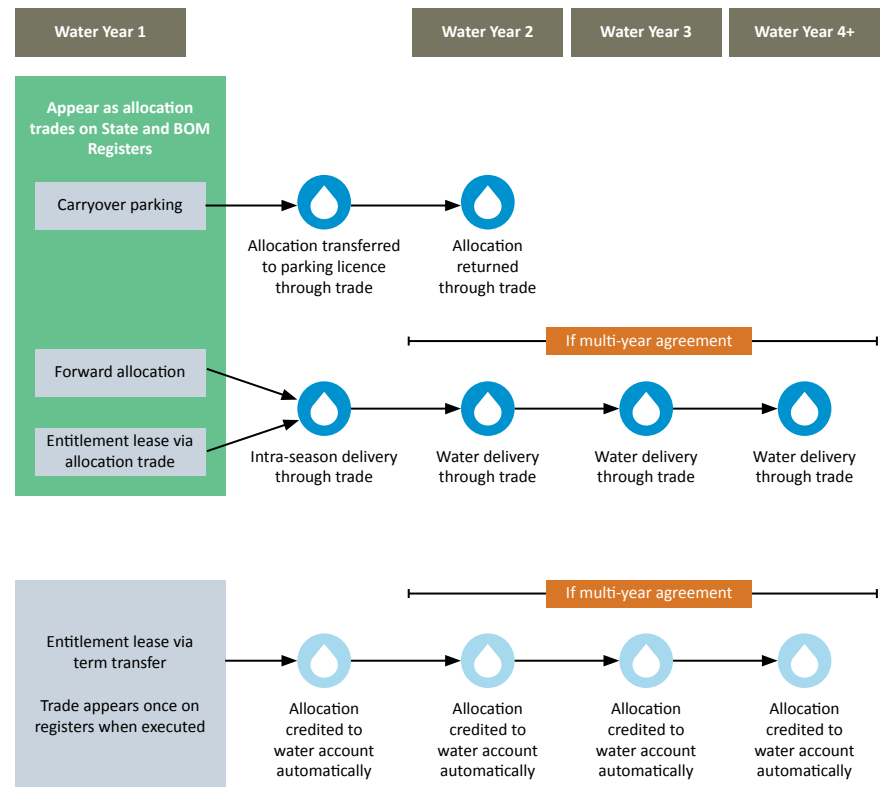
## Forward Allocation Trade

Allocation water is traded with a future delivery date at an agreed price. The date of delivery may be in the current water year or over multiple water years.

## Carryover Parking

Certain types of Entitlements can allow unused Allocation water to be 'carried over' from one water year to another. In a Carryover Parking contract a party with excess Allocation water (**'Placer'**) rents carryover space from an Entitlement **Holder** to carry water over. The 'parked' Allocation water is returned to the Placer in the following water year.

### Delivery Process





## In today's Talks Live we're going to cover:

Key water trading  
terms, including  
entitlements and  
reliability

Water market  
trading

Risk  
considerations  
for market  
participants

What's been  
happening in  
the market?

What's the  
outlook?

# What risks are you managing for?



- **Water availability** – rainfall and allocation yield not sufficient for watering requirements or excess water due to high allocations and unregulated flows.
- **Temperature** – high temperatures increasing your water requirement.
- **Price** – costs of entering the temporary or permanent water market to meet your watering requirements.

# What risks are you managing for?

- When trading water the rules are important – so getting help from expert sources is critical.
- The key trade limits that impact the Southern Connected System include the
  - Barmah Choke trade limit,
  - Murrumbidgee Inter-valley trade limit,
  - Goulburn to Murray trade limit, and
  - New South Wales to Victoria trade limit.
- Trade limits also apply in other areas, such as in Northern MDB. However, as these catchments are less connected hydrologically, this means that trade limits typically apply intra-catchment within zones (such as trade from Upper to Lower Lachlan).





# Primary water market products can help manage risk

## Primary products

### Temporary water

- typically always available on the market, BUT the price risk may be significant in years of low resource availability

### Permanent entitlement

- prices have been at historical highs (across much of the sMDB), so would need capital to buy more AND there's still allocation risk in dry years (depending on the entitlement purchased)



# What can secondary products do for me (as a buyer or seller)?

## Forwards

- give Buyers certainty of the volume of water they will have available upon transfer and the price they will pay
- provide Buyers an efficient risk management tool against allocation risk
- allow Sellers to lock in their future returns.

## Leases

- offer a long-term solution for both parties:
  - longer-term water security without capital expenses to the Lessee (albeit potentially comes with an allocation risk to the Lessee)
  - longer-term financial return for the Lessor.

## Carryover Parking

- affordable product with clear and tangible benefits
  - allows for the protection of Placer's carryover water
  - generates returns on Holder's unused carryover space
- Spill risk bearer depends on the contract type.

# There are risks associated with secondary products that need to be considered

- **Forward water** - A price premium compared to the current temporary water price.
- **Entitlement leases:** Lease terms are up from 3 years – what is the average temporary water price going to be over that time and what will the reliability be?
- **Carryover parking** - product is typically cheap but a if you don't have excess water, you need to buy it from the temporary market this year and you lose 5% on evaporation if you carry water over in Victoria.

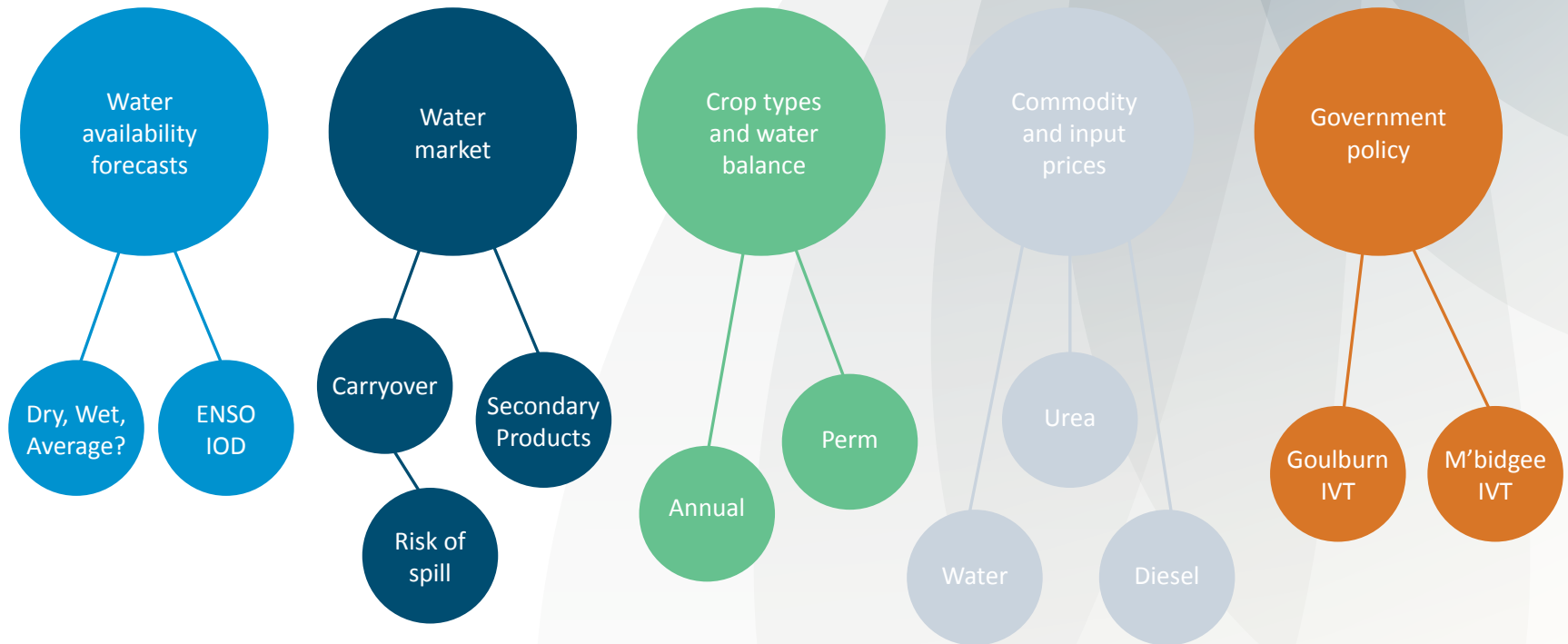
Zone	Spot Price	Forward Price
Vic Murray - 7	\$63/ML	\$160/ML, delivered October 2022

Zone	Entitlement Type	Lease Price	Term	Spot VWAP over last 4 years
Vic Murray - 7	High Reliability	\$285/ML	Up from 5 years	~\$280/ML

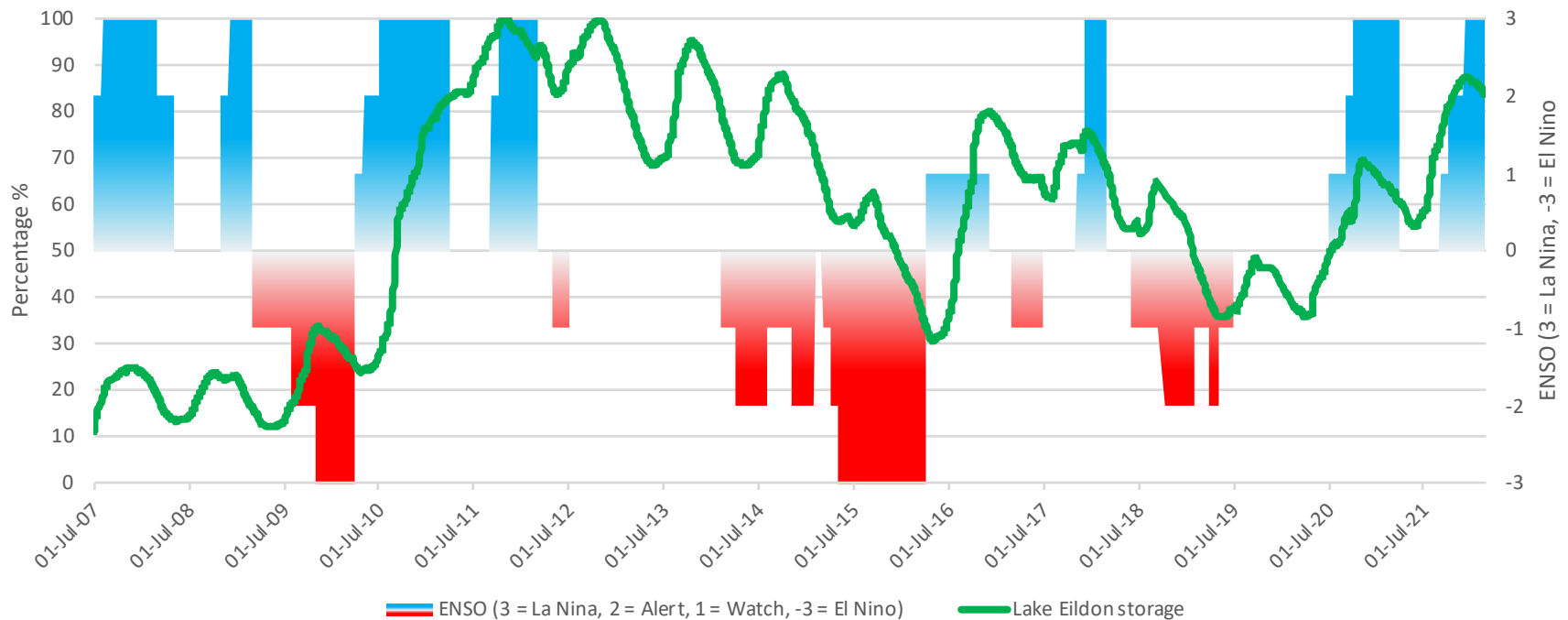
Zone	Entitlement Type	Unit Price
Vic Murray - 7	Low Reliability	\$90/ML



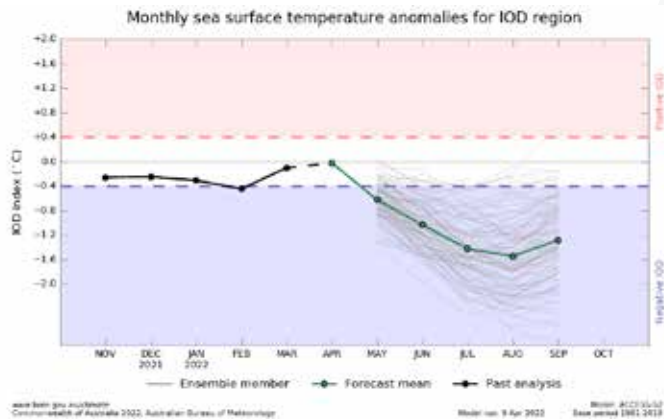
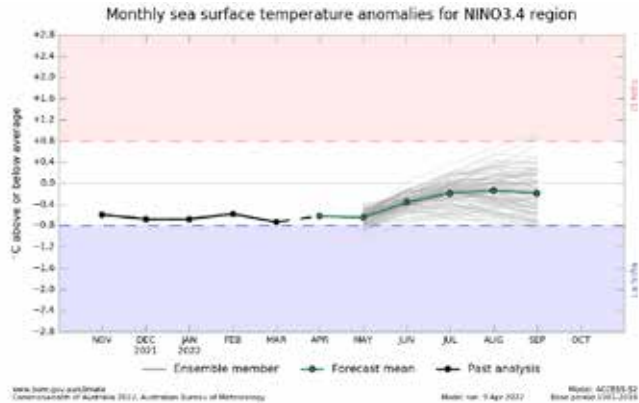
# All good things come to an end and it's better to be prepared – understanding your options is important



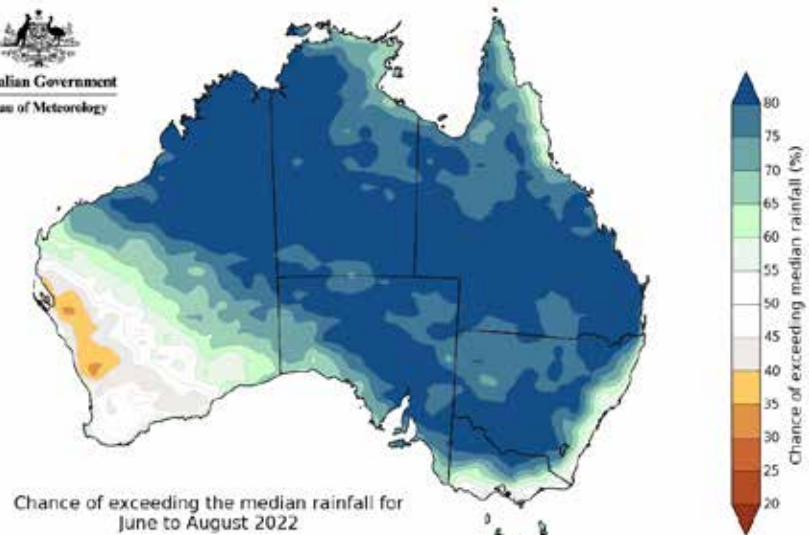
# ENSO index against Lake Eildon storage tells a story of climate influences



# Outlook for 2022 shows the potential for enhanced winter and spring rainfall across much of Australia



Australian Government  
Bureau of Meteorology



Model: ACCESS S2  
Base period: 1981-2019

Model run: 16/04/2022  
Issued: 21/04/2022

## In today's Talks Live we're going to cover:

Key water trading  
terms, including  
entitlements and  
reliability

Water market  
trading

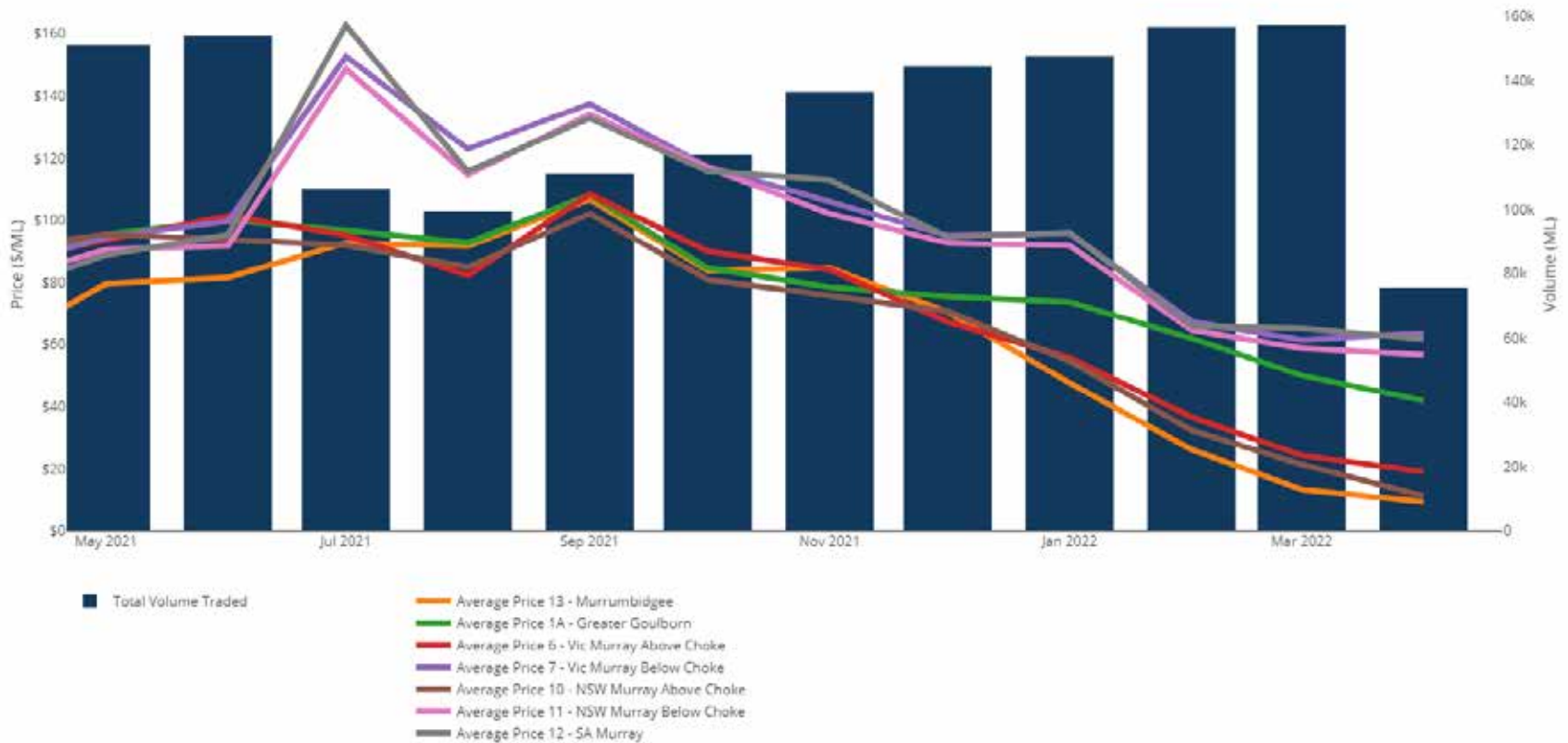
Risk  
considerations  
for market  
participants

What's been  
happening in  
the market?

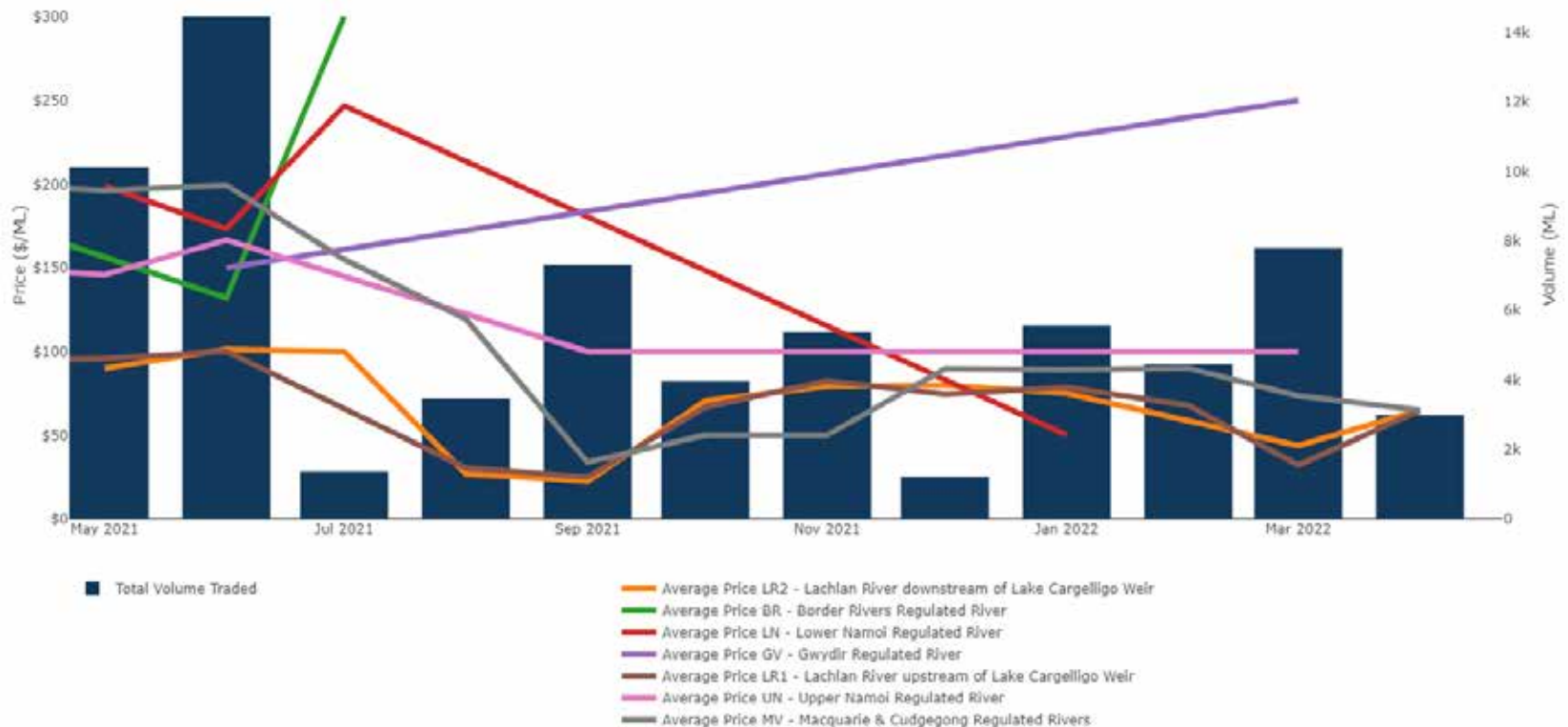
What's the  
outlook?



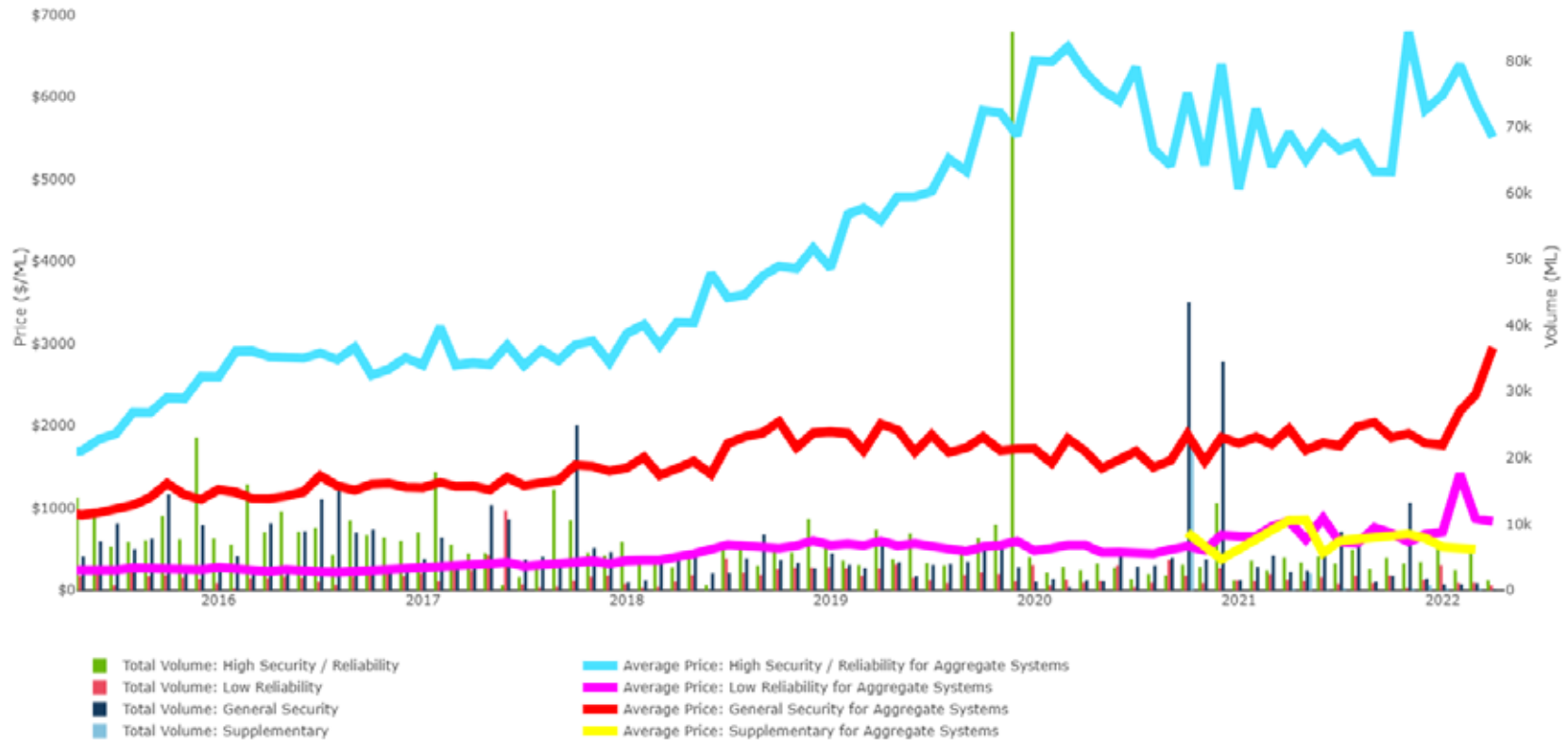
# High water availability: Southern connected allocation market values are falling



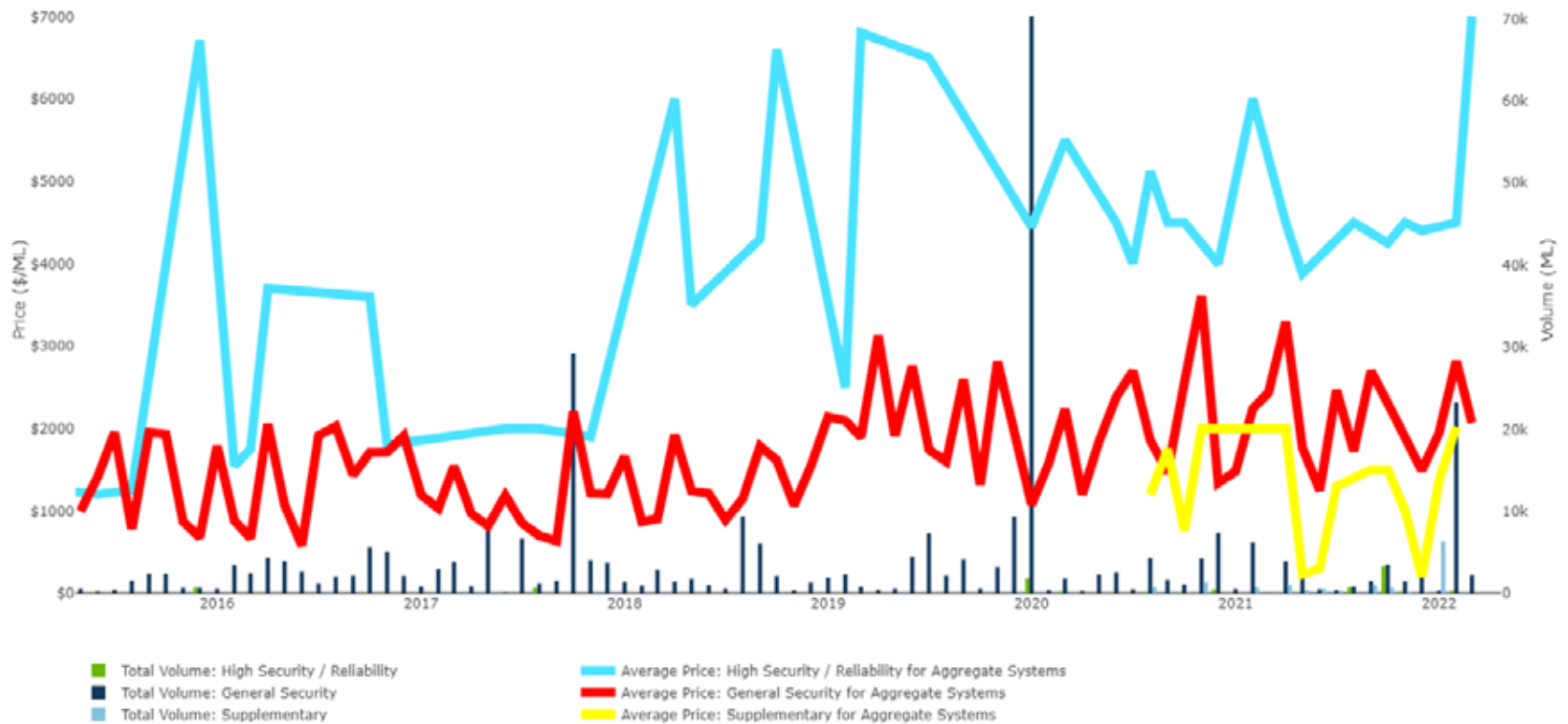
# High water availability: Northern markets have not fallen as much



# Southern connected permanent markets remain firm



## Northern permanent markets are also witnessing price increases





## Where are the trade limits currently at?

Barmah Choke limit **Open** 0.11 ML

NSW to VIC trade limit **Closed** -5,367 ML

Murrumbidgee IVT Out limit **Closed** -24 GL

Goulburn to Murray IVT limit **Closed** -70 ML

## In today's Talks Live we're going to cover:

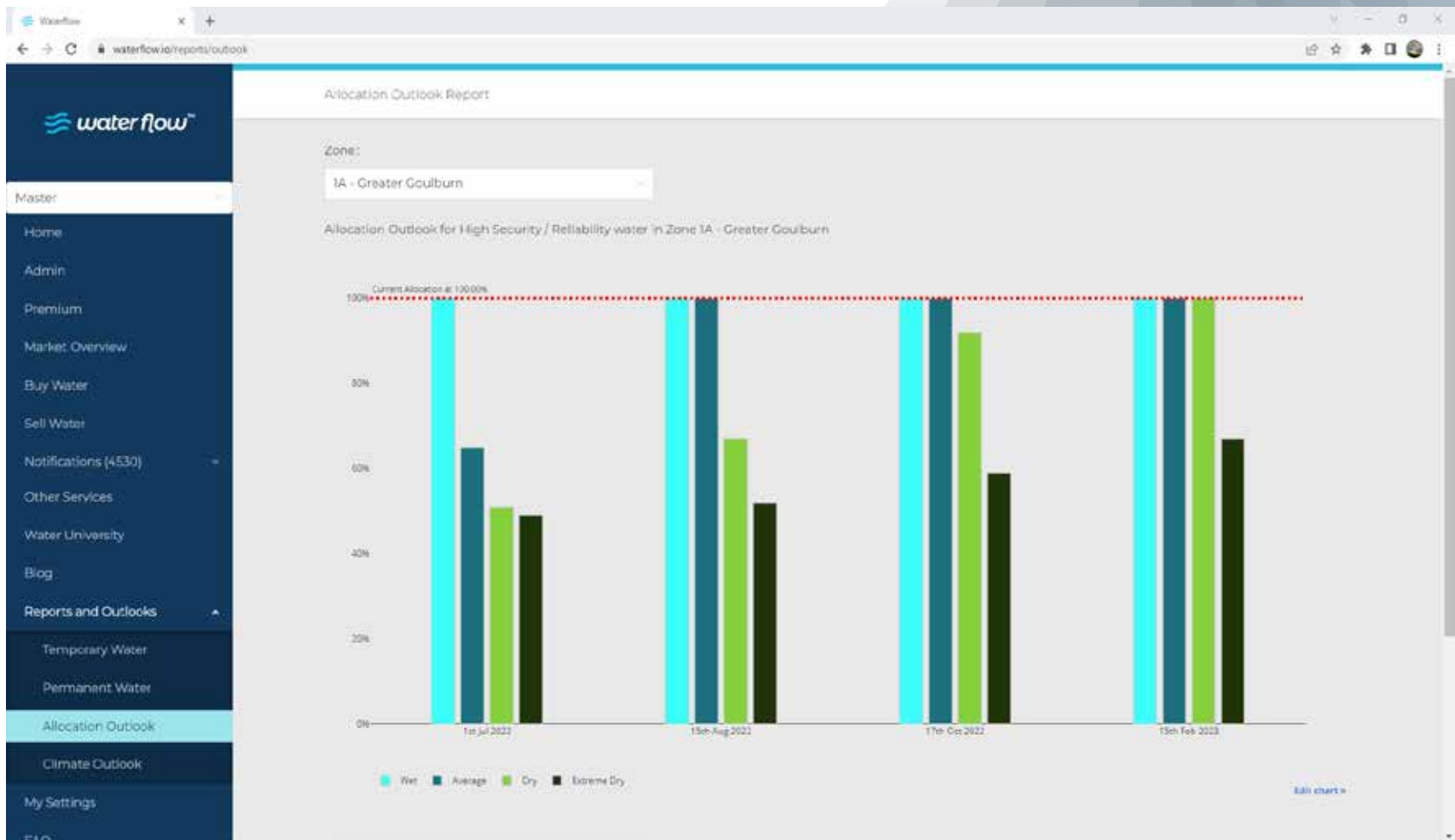
Key water trading  
terms, including  
entitlements and  
reliability

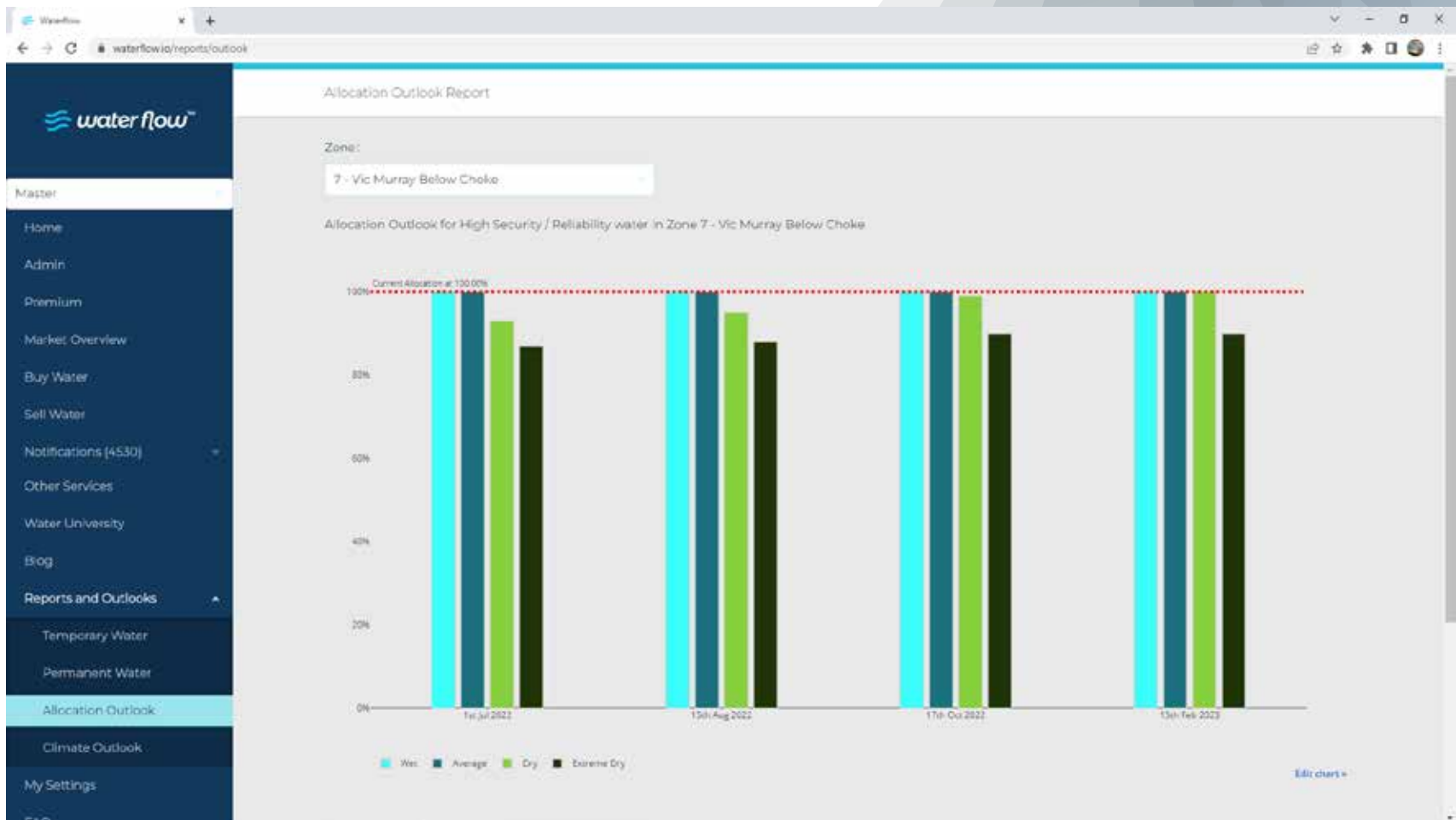
Water market  
trading

Risk  
considerations  
for market  
participants

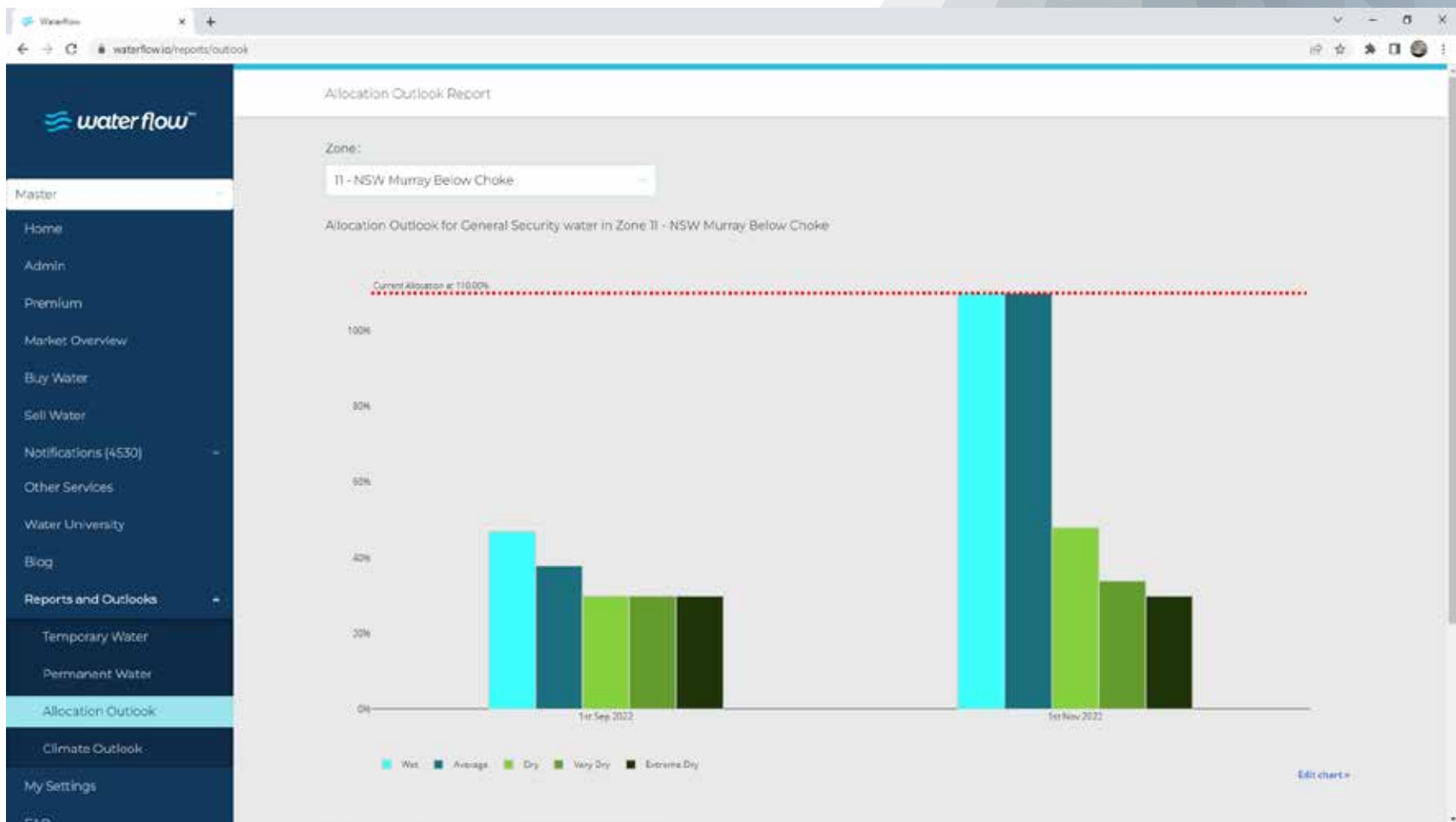
What's been  
happening in  
the market?

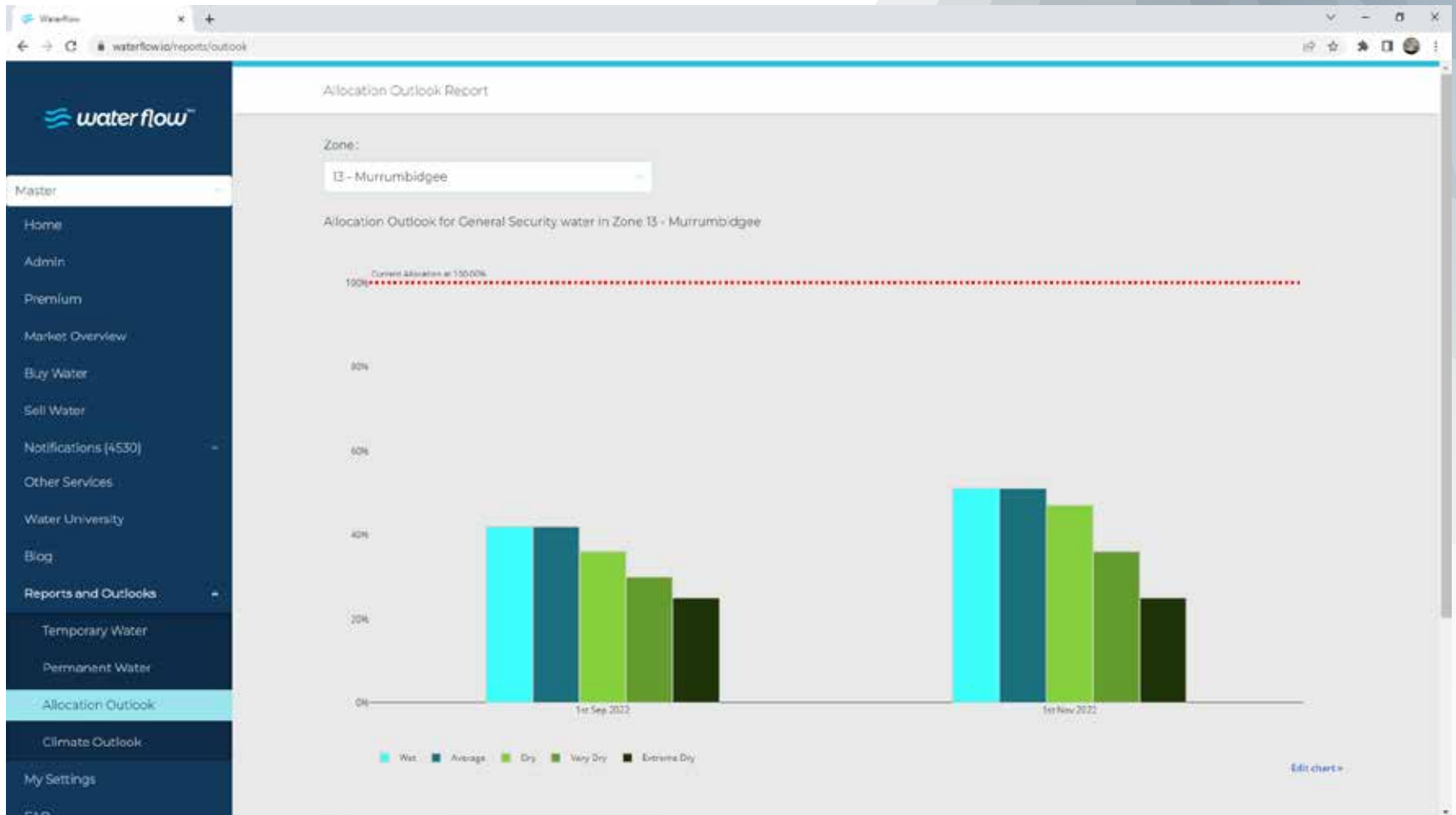
What's the  
outlook?









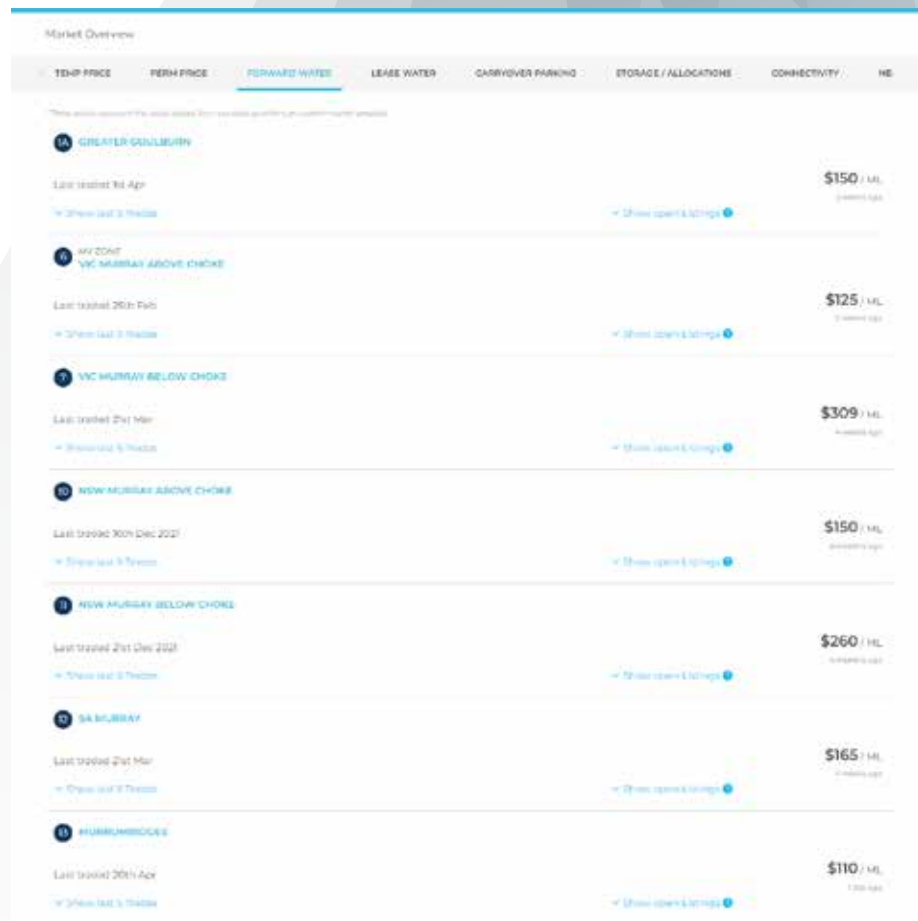


# Summary remarks

Another year of high water availability is likely, with high announced allocation outcomes expected.

What does this mean?

1. Well, we agree with ABARES: allocation prices will probably remain low over 2022-23. However, there are going to be regional differences because of IVTs.
2. Interestingly forward water is currently being sold for considerably more than the ABARES price outlook.
3. Entitlement prices will remain firm as there continues to be strong interest, whereas for many locations supply is constrained.



The screenshot displays a 'Market Overview' page with a navigation bar including 'TENDR PRICE', 'PERM PRICE', 'FORWARD WATER' (selected), 'LEASE WATER', 'CARRYOVER PARKING', 'STORAGE / ALLOCATIONS', 'CONNECTIVITY', and 'HE'. The main content area lists water prices for seven regions: SA GREATER SAULMURBY, VIC ZONE1 VIC MURRAY ABOVE CHOKE, VIC MURRAY BELOW CHOKE, NSW MURRAY ABOVE CHOKE, NSW MURRAY BELOW CHOKE, SA BURLBURY, and HUMBLEDOROUGH. Each entry includes the last traded date and time, and a price per ML. Links for 'Show open & storage' and 'Show open & storage' are provided for each region.

Region	Last Traded	Price (ML)
SA GREATER SAULMURBY	Last traded 1st Apr	\$150 / ML
VIC ZONE1 VIC MURRAY ABOVE CHOKE	Last traded 26th Feb	\$125 / ML
VIC MURRAY BELOW CHOKE	Last traded 2nd Mar	\$309 / ML
NSW MURRAY ABOVE CHOKE	Last traded 30th Dec 2021	\$150 / ML
NSW MURRAY BELOW CHOKE	Last traded 21st Dec 2021	\$260 / ML
SA BURLBURY	Last traded 2nd Mar	\$165 / ML
HUMBLEDOROUGH	Last traded 20th Apr	\$110 / ML

# Thank you

## Next Marsden Jacob Talks Live – 21 June, 1pm (AEST)

Using environmental economics to assess the benefits of ratifying an international convention.

Case Study: Minamata Regulation Impact Statement



### Alex Marsden

Associate Director

MBA (APESMA and La Trobe), GCertCoPo, BEnvEng  
(Hons) (RMIT)

### Contact



+61 406 763 198



+61 3 8808 7400



[amarsden@marsdenjacob.com.au](mailto:amarsden@marsdenjacob.com.au)



<https://www.linkedin.com/in/alexander-marsden-8328911b/>