2019 River Murray Water Information Sessions

Current conditions and options for 2019-20

SA Murray information sessions

Chris Olszak | Director | Aither | March2019
Who is Aither?

• Independent advisors on water markets, policy and infrastructure

• Our team works closely with investors, agricultural corporations and governments

• Offices in Melbourne, Sydney, Canberra, Brisbane, Adelaide

• Aither provides its water market clients with:
  – Ongoing advisory retainers
  – Transaction and investment due diligence
  – Water portfolio strategy
  – Water valuation services
  – Water price modelling
  – Regulatory and policy advice
The dryland drought conditions have been serious and have greatly reduced inflows into storages.
Allocation prices have responded to reduced inflows and high demand

Major southern Murray–Darling Basin allocation market prices

Source: Aither, 2019. Based on state water registers.
Entitlements prices continue to rise

Source: Aither, 2019. Based on state water registers.

Aither Entitlement Index (AEI)

Index


217.6
Large shifts in irrigated agricultural demand have occurred

**Tree crops**
Large increases in the planted area of almonds (and citrus) in the lower Murray and the Murrumbidgee

**Cotton**
Large scale introduction of cotton into the sMDB with ~70k ha and 800k bales in Murrumbidgee and Murray for 2017-18 season

**Grapes**
Strong export conditions have driven recent investments in new table and dried grape developments
The forecasts for next season are concerning

### Victorian 2019-20 mid-February allocation forecasts, announced 15 February 2019

<table>
<thead>
<tr>
<th>Entitlement</th>
<th>Wet</th>
<th>Average</th>
<th>Dry</th>
<th>Extreme Dry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victorian Murray HRWS</td>
<td>100%</td>
<td>100%</td>
<td>58%</td>
<td>20%</td>
</tr>
<tr>
<td>Goulburn HRWS</td>
<td>100%</td>
<td>100%</td>
<td>47%</td>
<td>18%</td>
</tr>
<tr>
<td>Campaspe HRWS</td>
<td>100%</td>
<td>100%</td>
<td>32%</td>
<td>16%</td>
</tr>
<tr>
<td>Loddon HRWS</td>
<td>100%</td>
<td>100%</td>
<td>37%</td>
<td>0%</td>
</tr>
<tr>
<td>Broken HRWS</td>
<td>100%</td>
<td>100%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>Bullarook HRWS</td>
<td>100%</td>
<td>100%</td>
<td>39%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### NSW 2019-20 opening allocation forecasts, announced 15 February 2019

<table>
<thead>
<tr>
<th>Entitlement</th>
<th>Opening Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW Murray GS</td>
<td>0%</td>
</tr>
<tr>
<td>NSW Murray HS</td>
<td>97%</td>
</tr>
<tr>
<td>Murrumbidgee GS</td>
<td>7%</td>
</tr>
<tr>
<td>Murrumbidgee HS</td>
<td>95%</td>
</tr>
<tr>
<td>Lachlan GS</td>
<td>0%</td>
</tr>
<tr>
<td>Lachlan HS</td>
<td>100%</td>
</tr>
</tbody>
</table>
Water allocated in dry years compared to horticultural demand

Horticulture demand and consumptive water availability - downstream of Barmah Choke in Victoria, NSW and South Australia

The yellow and red lines include an allowance of 200 GL for water traded in from the Goulburn and Murrumbidgee valleys. Trade assumptions are approximate and will vary year on year depending on seasonal conditions, crop prices and other drivers.

So what does all this mean and how can you manage risk?

• What’s your plan for the short term?
  – What happens if doesn’t rain?

• Have you considered all your options?
  – e.g. leases, carryover, forwards

• What’s your longer-term business strategy?
  – Long-term average cost of water

• How will you monitor and execute?
The good news: there are more options than ever before

In addition to local allocation and entitlement markets, you can source water from:

- Interstate entitlements
- Forwards
- Multi-year forwards
- Entitlement leases
- Parking/carryover
- (Call options)
Consider the costs, benefits and risks involved

- Cost risk
- Counterparty risk
- Diversification
- Trade restrictions
- Product availability
- Up-front capital costs
- Time frames
- Predictability
- Administration costs
- Liquidity / lock in

There’s no universal best option – it’s all about what’s right for your business at this point in time.
Buying more entitlement

• Additional SA River Murray entitlement

• Other High Security / Reliability products
  – NSW and Victoria – potential diversification benefits versus risk of trade constraints
  – Major capital expenditure in a sellers markets at the moment

• NSW General Security and Victorian LRWS
  – Lower cost
  – Carryover potential
  – But mainly yields water in average/wet seasons
Leasing entitlement

• Typical cost
  – 5-6% of entitlement cost (currently around $300 - $370/ML for Vic 7 High and SA Murray)
  – Lease cost has increased significantly in the last 12 months

• Consider as a financing product
  – Opex not capex

• But you still bear the allocation risk

• Other features to consider
  – Term / extension options, revaluation clauses, access to carryover rights, payment terms
  – Mainly sourced from major water investors
Forwards for allocation

- **Typical cost**
  - Premium on current allocation price (reflecting cost to carryover water)
  - Currently around $580/ML for next season

- **The only product which guarantees delivery of volume of water on a set date**
  - Counterparty risk is more the issue here

- **Other features to consider**
  - Term – hard to get more than 2 year forwards
  - Payment terms and delivery dates
  - Mainly sourced from major water investors
  - Locking in at a high price – regret is your biggest concern
Purchasing carryover space

• Draws on carryover rights of others who are not using them
  – Mainly in NSW and Victoria

• Move your allocation at end of year, then move it back again in new year

• Prices vary based on demand for carryover and the system
  – Generally fairly cheap (circa $20-$35/ML of space but this varies and check conditions)

• An alternative to purchasing Vic LRWS and NSW GS entitlement to get access to carryover
Spectrum of water portfolio options to balance risk and return

- **Allocation exposed**
  - OPEX intensive
  - Allocation spot market
  - Carryover or forwards
  - Leases

- **Light hedge**
  - Allocation spot market
  - Carryover or forwards
  - Leases
  - Owned entitlements

- **More hedge**
  - Allocation spot market
  - Carryover or forwards
  - Leases
  - Owned entitlements

- **Conservative**
  - CAPEX intensive
  - Owned entitlements

Source: Aither, 2019.
Be proactive

- Sunraysia wine grape grower – 2010

“If you are not across the water market, then you might as well be playing golf”
How Aither can assist

- Monthly updates for retainer clients
- Transaction and investment due diligence
- Water portfolio strategy
- Water valuation services
- Water price modelling
- Regulatory and policy advice
Quick overview of southern MDB markets

Total entitlement market value (February 2019): $23.4 billion

Aither Entitlement Index (AEI) (February 2019): 217.57 points (up 38 per cent over twelve months)

Allocation prices (week of 4 March 2019): $450 to $455 per ML

Annual value of total entitlement transfers (2017-18): $347 million

Estimated annual value of commercial allocation trade (2017-18): $189 million (approximately)

Entitlement market turnover (2017-18): 2 per cent