

Integrating climate change risk and opportunity into business decisions - a practical view

Gioia Small, Regional Manager Sustainability ANZ



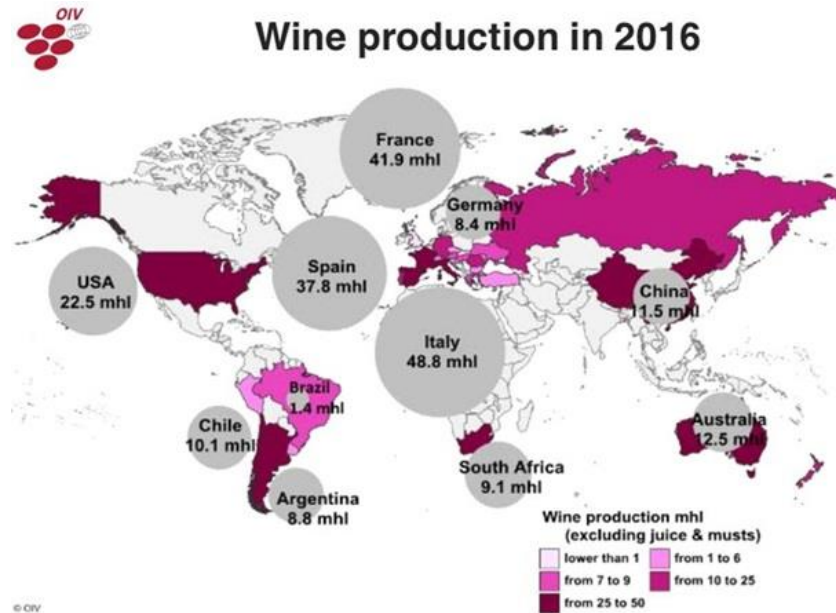
TREASURY
WINE ESTATES

Wine is considered the canary in the coal mine for climate change



“...the output of wine this year alone (2016) – the **hottest since records began** – was just under 26 billion liters (5.7 billion gallons).

This is the **lowest production rate on record for the last two decades**, and marks a global drop of about 5 percent compared to 2015.”



Our observations

1 Earlier

Vintage advancing by up to **2 days** per year

2 Shorter

McLaren Vale 20 years ago – **21 days** between maturity of late and early varieties

2015 – **7 days**

3 Faster

1998 – bulk of Shiraz in Barossa ripened over **30 days**

Today – **15 days**

Risks and opportunities in our supply chain

Vineyard



- Water security
- Grape quality
- Cost of production +/-

Winery



- Compressed vintages placing stress on infrastructure
- Energy pricing

Markets



- Gatekeepers, markets and investors wanting to know more

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Winery



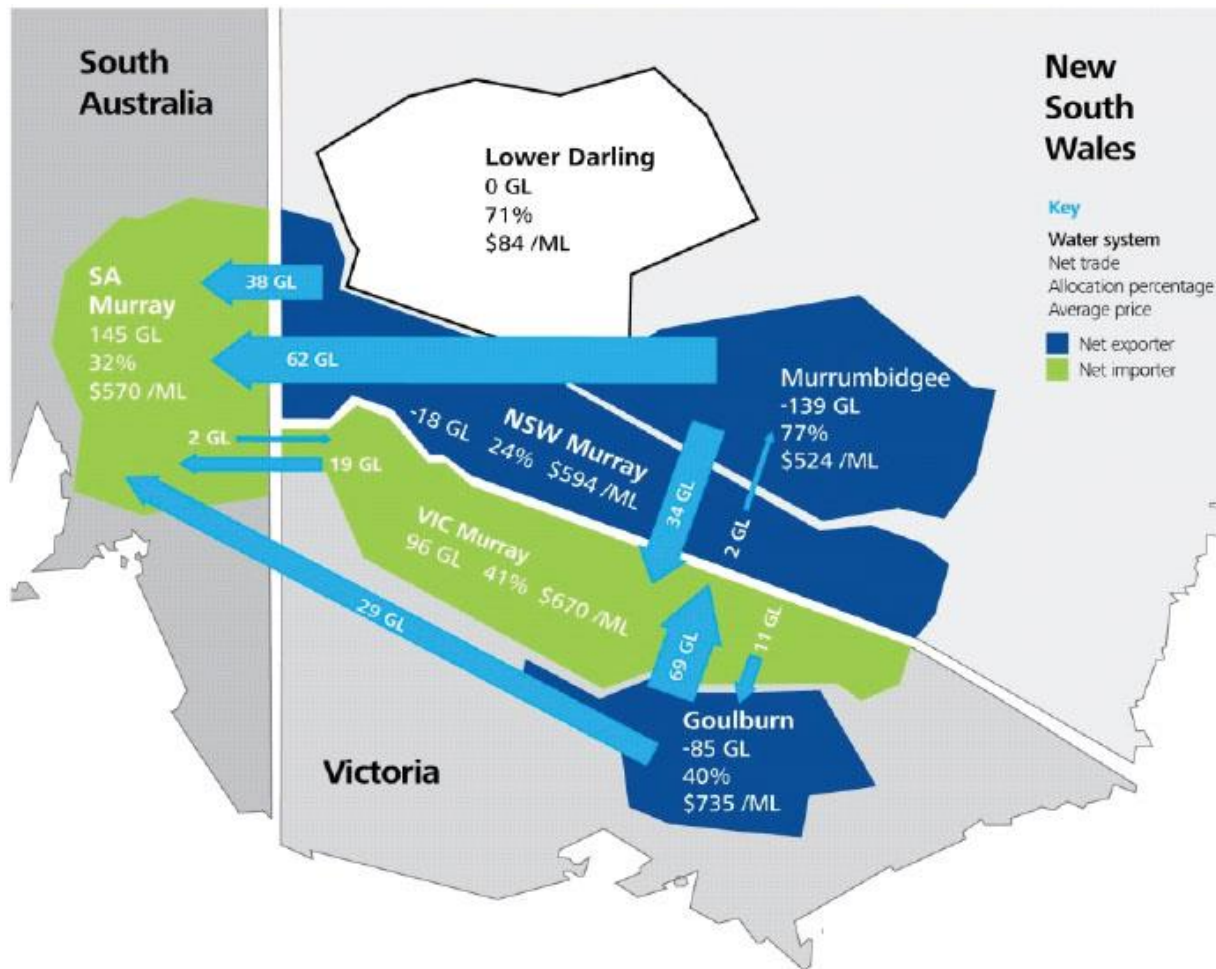
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Water trading has minimised the risks with water security



In the vineyard – changing agronomic practice



Flavour development



Winter



Spring



Summer



Autumn

Standard Pruning



Delayed Pruning



Vineyard— changing agronomic practice

Pruned in May

Pruned in September

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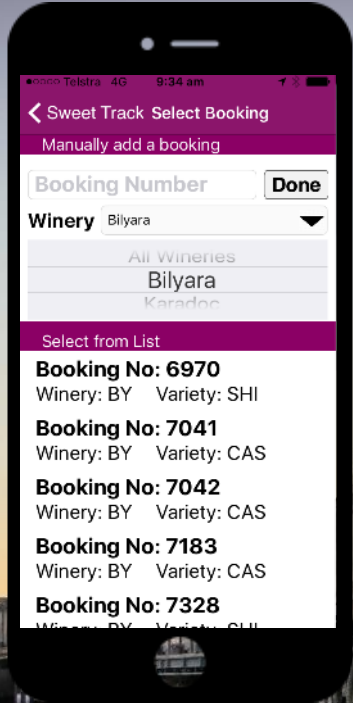
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Winery – a new approach to logistics



Winery – faster ferments and processing



Water additions



Inline heating



Yeast acclimitisation

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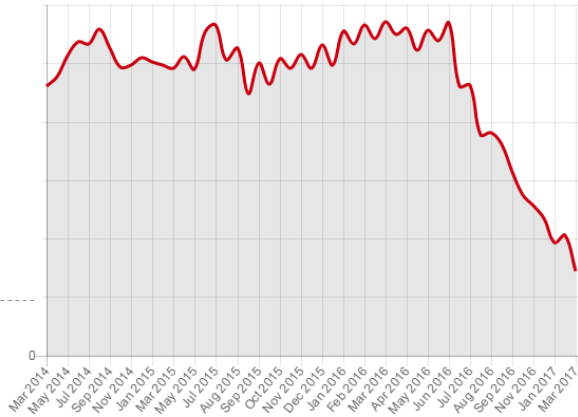
Disclosure



H₂O

Actual Use (kL)

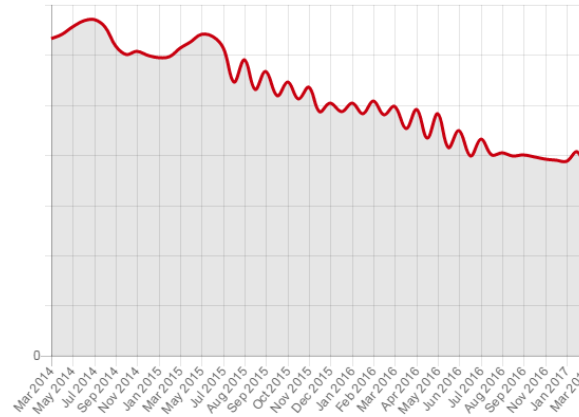
Actual Use Rolling Average



Energy

Actual Use (GJ)

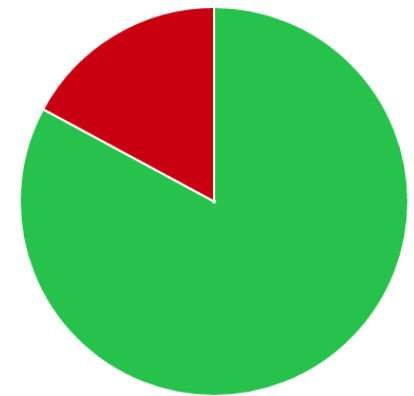
Actual Use Rolling Average



Waste

Actual Use YTD (Tonne)

Recycled Landfill



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