
Development of SFE State Water Indexes

Frequently Asked Questions

1. What is a Water Index?

Simply, it is a snapshot of the availability of water in a valley. It can be as simple as the active capacity figures for a storage, eg. Burrendong is at 15% capacity, or a combination of these figures that groups storages within a valley or region.

2. Why are Water Indexes being proposed?

As part of the Australian water reform process, the need to signal water shortages, water pricing and the creation of incentives to invest in water resources are critical. The risk of water availability is a reality of life for much of the Australian rural economy. In this sector, risks are borne not only by users of water, but by all parties who make up that rural economy including banks, insurers, processors and suppliers. Unlike equity, money or commodity markets, there is no market into which users and investors exposed to water availability risk, can effectively hedge that risk.

The implications of this missing piece of economic infrastructure are profound. Farmers with water availability risk have no means of hedging against drought conditions. Service providers to these farmers therefore assume similar exposure and add the requisite risk premium, increasing the cost of doing business for farmers. And finally investors seeking large scale capital investment opportunities either avoid this sector, or are forced to price this risk accordingly. The result is increasingly high costs compounded by even greater inefficiency. State Water and the Sydney Futures Exchange (SFE) worked jointly to develop information that would meet market needs and assist businesses hedge their exposure to water supply and overall weather conditions. In the development process of the proposed SFE State Water Indexes, a broad range of applications have been explored alongside that of creating water futures contracts. The listing of futures contracts on water indexes would create an indicator of forward water storage expectations against which parties would be able to hedge water availability risk.

3. What is in this for dryland farming communities and businesses?

Alongside the proposed creation of water futures contracts based on the SFE State Water Indexes, it is envisaged that there is opportunity to develop indexes that would assist all farming businesses, as well as the communities and Governments that

support them, to use the Indexes as a tool for planning around seasonal changes. For example if the Index in the Barwon Valley is low, say 10%, then it would be fair to say that it is dry right across the valley. Seasonally Corrected Indexes tell a story about changes in water availability, and therefore seasonal conditions, over time. Again, this information would be a useful tool in planning for changes in seasonal conditions.

4. What is wrong with just using storage percentages?

In order to create a picture across broader areas such as regions, multiple storage percentages are required. By using indexes, which combine storages in a particular area and giving a weighting to the contribution each storage makes to that region, one simple figure can be used to provide a snapshot of water availability in that area.

For example, in the Macquarie region say Windamere is at 35% capacity and Burrendong is at 15% capacity; the SFE State Water Macquarie Index is 21.46 (taking into account the contribution each storage makes to the Macquarie region's water availability).

5. Does a futures market ensure greater supply of water for irrigators and other water users?

No. Futures contracts on indexes (should SFE decide to establish a market based on proposed SFE State Water Indexes) has nothing to do with the physical access to water. It does, however, provide parties with a risk to water availability (as indicated by the Indexes), a risk management tool to offset financial losses resulting from increased costs for water or even a reduced or failure in supply.

6. How would Seasonally Corrected Indexes work?

The SFE State Water Indexes merely quote the combined daily value of the storages that make up each of the Indexes. However, storages rise and fall with the seasons.

For example, the Murray Storages are usually lowest in autumn, after the low summer inflows and high irrigation demands, and highest in spring after the high inflows and low winter irrigation demands.

This means that an index of 50 in autumn may mean average conditions while an index of 50 in spring may be an indicator of poor seasonal conditions.

State Water can produce indexes that 'correct' for these seasonal differences and are then calculated as a percentile of the full range of expected storage levels on that day of the year. An example of a seasonally corrected storage index (the Murrumbidgee) can be found in the Fact Sheets.

7. Would the SFE State Water Indexes (eg. Barwon, Murray) be seasonally corrected?

No. But it is envisaged that the Seasonally Corrected Indexes may be helpful for parties interested in understanding what the level of water availability is after removing seasonal factors.

8. How would SFE futures contracts on the water indexes work?

SFE is considering the listing of futures contracts on the proposed indexes. This would provide a market similar to the interest rate hedge market, except in this case, the risk being hedged is not interest rates but water availability, as indicated by the Indexes. Such a market would assist in better decision-making and forward risk management planning. Establishment of the market would provide parties with an ability to hedge exposure to water storage levels by buying and selling contracts based on the Index related to a particular storage group eg. Barwon, Macquarie, Lachlan, Hunter, Murray.

For example, for parties holding a bought futures position, this position would result in a loss being incurred if the futures price fell (eg. buying one of the proposed futures contracts at 60.00 and selling it at 30.00 would result in a loss of \$3,000¹). If a party had risk to low water storage levels, then selling water futures contracts would hedge that risk by generating an offsetting financial profit.

9. How would the proposed SFE Water Futures contracts provide prices for future water storage?

Assume there are drought conditions and the SFE State Water Murray Index is at 27.23 (as was the case on 16 July 2004). The fact the Murray Index is currently at this level does not mean that the Index will stay at this level in future. Analysis of expected rainfall and inflows/outflows will form the basis of settling expectations of the likely value of the Murray Index in the future. So, current analysis might suggest

¹ SFE is considering the listing of futures contracts on water with each contract having a 'Face Vale' of \$10,000.

there is return to normal conditions in 6-12 months, and the Index could rise to be 80.00 (80%) by November 2005. Parties buying and selling futures contracts on the proposed SFE Water Futures Market would lead to a futures price being established, which would reflect expectations of water inflow/outflows. This would provide a 'forward price curve' against which parties with exposure to water storage levels can hedge their risk by buying and selling futures contracts.

10. What credit risk do buyers and sellers of futures contracts have?

All futures contracts traded on the SFE are 'margin'd', which means buyers and sellers have credit exposure to the SFE Clearing Corporation, not to each other.

11. When will the SFE Water Futures Market be established?

The Water Index project is simply a proposal, currently still under development. The launch of the SFE State Water Index Discussion Paper is part of the consultation process involving a wide range of stakeholders. Further development of the Indexes and any futures markets will depend on your feedback.

12. Will there still be access to the daily active storage level after Water Indexes are introduced?

Yes. The daily active storage level would still be available from State Water via the website: www.waterinfo.nsw.gov.au or www.statewater.com.au.

Further information

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