

Temporary trade and how it is counted

There were many similar themes and commonly asked questions during the recent call for submissions relating to amended long-term diversion limit equivalence (LTDLE) cap factors. The responses below are provided in relation to the issues raised.

Why is temporary trade data being used?

In the original modelling of LTDLE factors, the baseline diversion limit (BDL) scenario grouped together the estimated take from a range of entitlement types and used this to calculate a single value. Historical records of diversions were then used to split the complete diverted volume into different components that could be attributed to each of the entitlement types. The results produced were both unreliable and confusing.

Using historical diversion records included using an estimate of water availability based on the modelled long-term average reliability of allocations. In some cases this resulted in the records showing more water having been used than was available through allocations, or even the amount available at a valley scale.

There were also examples where usage was recorded against licence types in a way that didn't match up with our general understanding of how entitlements were used in practice.

NSW Department of Industry has looked at some key examples and determined that systematic temporary trades would explain the vast majority of the confusing results observed. Historically, it had been assumed that the amount of trade was small enough to ignore in determining the LTDLE factors. This work determined that this was no longer a reasonable assumption.

This change represents a significant difference to earlier methods of calculating cap or LTDLE factors.

Where is the use counted?

The NSW water accounting system uses a system similar to a bank account, where each water entitlement is linked to a single account. When water is allocated against the entitlement share from an available water determination, the volume of water is added to the account. When water is taken, the meter reading is deducted from the balance.

Similarly, when a water allocation is traded to an account, that account balance will go up, and when it is traded out, the account will go down. Diversion is recorded at the point where the water is taken. Traded water is therefore counted as use from the buyer's account, because that is where the use is measured.

However, when determining LTDLE factors the accounting is more complex. The trade affects the volume of allocation water available, therefore it needs to be accounted for the seller and for the buyer involved in the transaction.

The following is a simplified example of how trade can affect the calculation of factors:

Farmer A has a 100 ML high-security entitlement. Over time, he has an allocation of 100 ML, and uses an average of 20 ML.

If we ignored trade, the LTDLE factor would appear to be $20/100 = 0.2$. This would mean that by buying the entitlement, the Commonwealth would assume that there would be only 20 ML less irrigation taking place.

However, if Farmer A only uses 20 ML each year because he consistently sells 70 ML to Farmer B, this is not an accurate reflection of usage. A better measure of Farmer A's usage would be $20/(100-70) = 0.66$.

At the same time, Farmer B has a 100 ML general security entitlement. Over time, she has an average allocation of 60%, and uses an average of 55 ML of that entitlement. However, her overall usage is an average 125 ML (55 ML + 70 ML), because of the trade from Farmer A.

If we ignore the impact of trade, the direct calculation would give an LTDLE factor of 1.25, which clearly can't occur. However, if we include the trade from Farmer A, the calculation becomes $125/(60+70) = 0.96$

In practical terms, this results in some of the recorded long-term usage being counted for LTDLE purposes on both sides of the equation. This is done to give the best possible indication of the historical use of allocations, as expressed through trade and usage data in a range of conditions.