



AUSTRALIAN COMPETITION
& CONSUMER COMMISSION

Water Market Rules guidance for irrigation infrastructure operators: Fixed network losses (conveyance losses)

December 2022

Key terms

fixed network losses: an estimate made by an irrigation infrastructure operator, in respect of a financial year, of the number of units or volume of water lost in during the delivery of water through the irrigation infrastructure operator's irrigation network to the point of delivery to holders of an irrigation right, but which does not include variable water losses.

infrastructure operator: any person or entity that owns or operates infrastructure for one or more of the following purposes:

- i) storage of water
- ii) delivery of water
- iii) drainage of water

for the purpose of providing a service to someone who does not own or operate the infrastructure.

irrigation infrastructure operator: an infrastructure operator that operates water service infrastructure for delivering water for the primary purpose of irrigation.

irrigation network: the water service infrastructure operated by an irrigation infrastructure operator for the purposes of delivering water for the primary purpose of being used for irrigation. An irrigation network typically comprises a network of carriers (open channels, pipes and/or natural waterways) that convey water from a water source through customer service points to customer properties. It may be either a gravity fed network (typically using channels and/or natural waterways) or a pressurised network (using pipes).

network losses (also known as conveyance losses): water lost during the distribution of water through the irrigation infrastructure operator's network due to a number of factors including evaporation, seepage, transpiration, meter error, and broken pipes. This loss represents the difference between the volume of water that is diverted by an irrigation infrastructure operator (from the water source) for distribution to customers, and the volume of water delivered by the operator to customers. This loss is likely to consist of both fixed and variable components and can vary substantially between networks and between seasons.

transformation: the process where an irrigator (or anybody other than the irrigation infrastructure operator) 'transforms' the whole or part of an irrigation right into a water access entitlement.

variable water losses: the number of units or volume of water lost during the distribution (delivery) of water to the point of delivery to holders of an irrigation right, and which is attributable to the number of units or volume of water delivered to holders of irrigation rights.

water access entitlement: a perpetual or ongoing entitlement, by or under a law of a State, to exclusive access to a share of the water resources of a water resource plan area.

About this guidance

The ACCC is responsible for monitoring and enforcing compliance with the Water Market Rules 2009 (water market rules) under the *Water Act 2007* (Cth).

These rules prohibit irrigation infrastructure operators from preventing or unreasonably delaying irrigators in the Murray-Darling Basin permanently transforming their irrigation right into or onto a statutory water access entitlement (the process of transformation).

This guidance has been designed to assist irrigation infrastructure operators to manage fixed network losses in accordance with the water market rules, while also assisting irrigation infrastructure operators' customers to understand how these rules apply.

Network (conveyance) losses

Network losses (also known as conveyance losses) is the water lost within an irrigation infrastructure operator's network due to a variety of factors including evaporation, seepage, transpiration, meter error and broken pipes.

Network losses consist of fixed and variable components:

- **Fixed network losses** are an estimate made by the irrigation infrastructure operator of the water lost in a financial year during the delivery of water to irrigators who hold an irrigation right against the irrigation infrastructure operator, that are not losses attributable to variable losses.
- **Variable water losses** are defined in the water market rules as the water lost during the delivery of water to irrigators who hold an irrigation right against the irrigation infrastructure operator, that is attributable to the number of units or volume of water delivered to holders of irrigation rights.

Fixed network losses

While variable water losses will fluctuate considerably depending on the volume of water delivered to irrigation right holders, fixed network losses are those losses incurred by the irrigation infrastructure operator irrespective of variations in the volume of water actually delivered.

Fixed network losses are generally socialised by irrigation infrastructure operators across their networks. Some irrigation infrastructure operators hold separate water access entitlements relating to network losses. As a result, the water market rules:

- **permit** an irrigation infrastructure operator to require a contribution to fixed network losses from a transforming irrigator—if the irrigation infrastructure operator does not hold a separate water access entitlement relating to network losses.
- **prohibit** an irrigation infrastructure operator that holds a separate water access entitlement related to network losses from reducing the volume of water to which an irrigator is entitled under their irrigation right. This is because such action would allow an irrigation infrastructure operator to over-recover fixed network losses.

Irrigators may request details of their irrigation right including any deductions to account for fixed network losses

Prior to submitting a transformation application, an irrigator may request details of their irrigation right in writing from their irrigation infrastructure operator.

The irrigation infrastructure operator must within 20 business days of receiving the request provide the applicant with details of their irrigation right, including:

- the number of units or volume of water that the irrigator is entitled to (and how this has been calculated)
- any reduction to the units or volume of water to account for the irrigator's share of fixed network losses.

The ACCC has released guidance on transformation processes and transformation application fees.

Not all irrigation infrastructure operators can reduce an irrigation right to account for fixed network losses

An irrigation infrastructure operator can reduce the number of units or volume of water to which the holder of an irrigation right is entitled, for the purposes of transformation, if the irrigation infrastructure operator does not hold a separate water access entitlement for fixed network losses.

The irrigation infrastructure operator can calculate an irrigator's share of the fixed network losses either:

- as agreed between the parties in writing, or
- using the formula shown below in Box 1.

If the irrigation infrastructure operator uses the formula in Box 1, it must provide the irrigator with an explanation of how fixed network losses were calculated so that the irrigator can confirm the accuracy of the calculation.

Box 1: Formula calculation of fixed network losses for the purposes of transformation under the water market rules

$$\text{A. The number of units or volume of water which the entitlement may be reduced by.} = \frac{\text{B. The number of units or volume of water to which the holder of the irrigation right is entitled through the irrigation infrastructure operator's network at the date the irrigator requests details of their irrigation right for the purposes of transformation.}}{\text{C. The total number of units or volume of water to which all holders of irrigation rights against the irrigation infrastructure operator are entitled through the operator's network at the date the irrigator requests details of their irrigation right for the purposes of transformation.}} \times \text{D. The average number of units or volume of the irrigation infrastructure operator's fixed network losses for the 10 financial years immediately before the financial year in which the irrigator requests details of their irrigation right.}$$

Note: The value in C should be reduced to reflect any prior reductions in irrigation rights to take account of fixed network losses. Therefore, the value of C will reduce to reflect reductions in the volume of irrigation right held against the irrigation infrastructure operator as irrigators transform their irrigation rights over time.

The value in D should be reduced to reflect any prior reductions in irrigation right held against the irrigation infrastructure operator due to previous transformations. This is because once irrigators transform, the total fixed network losses that the irrigation infrastructure operator needs to recover from non-transformed customers will reduce. Therefore, the value of D will vary over time depending on variations in the 10-year average and the effect of transforming irrigators.

Case Study: The water market rule formula for network losses

Australian Water Deliveries has 100 irrigators who hold varying volumes of entitlements to water under their respective irrigation rights. Australian Water Deliveries **does not** hold a separate water access entitlement relating to network losses.

On 1 January 2022, Ms Jones applies to transform all her irrigation right. She holds 100 ML of water entitlement under her irrigation right ($B = 100$).

The total volume of all irrigation right held against Australian Water Deliveries is 10,000 ML ($C = 10,000$).

Australian Water Deliveries has calculated its fixed network losses vary between 150 ML and 300 ML over the last 10 years, with an average over the last 10 years of 200 ML ($D = 200$).

Ms Jones is the first irrigator to transform irrigation right held against Australian Water Deliveries.

Australian Water Deliveries calculates Ms Jones' contributions to fixed network losses to be 2 ML ($100 \div 10,000 \times 200 = 2$) and is permitted to reduce Ms Jones' irrigation right by this amount when Ms Jones transforms. Therefore, Ms Jones can transform 98 ML onto the water access entitlement she holds in her own name.

Parties can agree to a different calculation of fixed network losses

Some irrigation infrastructure operators and irrigators may prefer to come to an agreement in writing relating to fixed network losses rather than use the formula outlined in the water market rules.

In some cases, a written agreement may be simpler and easier to implement than the formula. Also, some irrigation infrastructure operators may choose to use the formula as a 'starting point' before making agreed changes to reflect the circumstances of the irrigation infrastructure operator and its customers.

Irrigation infrastructure operators may find that an independent audit is useful in deciding how best to calculate fixed network losses for their network.

If the parties are not able to agree on fixed network losses

If an irrigator believes that the proposed reduction for fixed network losses calculated by the irrigation infrastructure operator is not appropriate, the irrigator should seek to reach agreement with the irrigation infrastructure operator on those details in accordance with the water market rules.

The ACCC has released guidance about dispute resolution under the water market rules.

Separate water access entitlement to cover fixed network losses

Some irrigation infrastructure operators may hold a separate water access entitlement to cover fixed (and possibly variable) network losses. The benefits of holding a water access entitlement to cover network losses include:

- transparency about the volume of water available to cover network losses
- security that the irrigation infrastructure operator has sufficient water to cover network losses
- transparency and security about the volume of water that rights holders are entitled under to under their irrigation rights, which will not also be used to cover network losses
- clarity about the volume of customers' irrigation rights if an irrigator decides to transform their irrigation right into a water access entitlement.

If irrigation infrastructure operators do not hold a separate water access entitlement relating to network losses, the water market rules provide that an irrigation infrastructure operator may, on receiving an application for transformation, reduce the volume of water to which an irrigator is entitled under their irrigation right.

However, if the irrigation infrastructure operator held a separate water access entitlement relating to network losses immediately before the irrigator gave notice of their intention to transform, the irrigation infrastructure operator **cannot** reduce the irrigator's irrigation right to account for fixed network losses.

Further related guidance

- Water Market Rules guidance for irrigation infrastructure operators: Application of the rules.
- Water Market Rules guidance for irrigation infrastructure operators: Transformation processes and transformation application fees.
- Water Market Rules guidance for irrigation infrastructure operators: Dispute resolution.
- Water Market Rules guidance for irrigation infrastructure operators: Security.