

Proposed new method to calculate the value of water taken illegally

Section 60G of the *Water Management Act 2000* (WM Act) is a charge that the Natural Resources Access Regulator (NRAR) can impose when water is taken illegally. This charge is based on the value of water taken.

The *Water Management (General) Regulation 2018* (the Regulation) (clause 20) details the method for determining the value of water taken.

The current method for valuing illegally taken water

The current method for valuing illegal water take in clause 20 can be summarised as:

- where published water trading prices are available, the value of water is the average weighted price at the time the water was taken (which corresponds to the water source that it was taken from)
- where no trading prices are published, the value of water becomes the published water access (entitlement) charge (PWAE charge).

Why we need a new method

The current method for valuing illegally taken water produces highly inconsistent results across water sources and does not adequately reflect the actual value of the water.

The water's value often ends up being calculated via a PWAE charge applicable to the water source from which water was illegally taken. PWAE charges are administrative charges issued by the Independent Pricing and Regulatory Tribunal (IPART) and do not represent the value of water, resulting in inconsistent charges and an ineffective deterrence to illegal water take.

NRAR is responsible for the enforcement of water management laws in NSW. NRAR's experience implementing the current method has produced inconsistent and often extremely low water values across water sources, limiting NRAR's ability to impose charges for illegal take under section 60G of the WM Act.

The proposed new method

The new method to determine water value for the purpose of section 60G uses a cascading process to determine a Volume Weighted Average Price (VWAP) of a megalitre (ML) of water. The conditions to determine a VWAP are:

1. Where there are 20 or more trades within an individual water source in the relevant water year a VWAP is determined for that water source.
2. If there are less than 20 trades in a water source in a water year, trade data is taken for all water sources in the relevant water sharing plan (WSP) area to determine the VWAP.
3. If there are less than 20 trades within the WSP area, then all trade data in all water sources within the relevant water region are used to determine the VWAP.
4. If the 20-trade threshold is still not met, the value of water is equal to the prescribed region gross margin value (Table 1)

A summary of the VWAP process is shown graphically in Figure 1.

Figure 1. The proposed new method

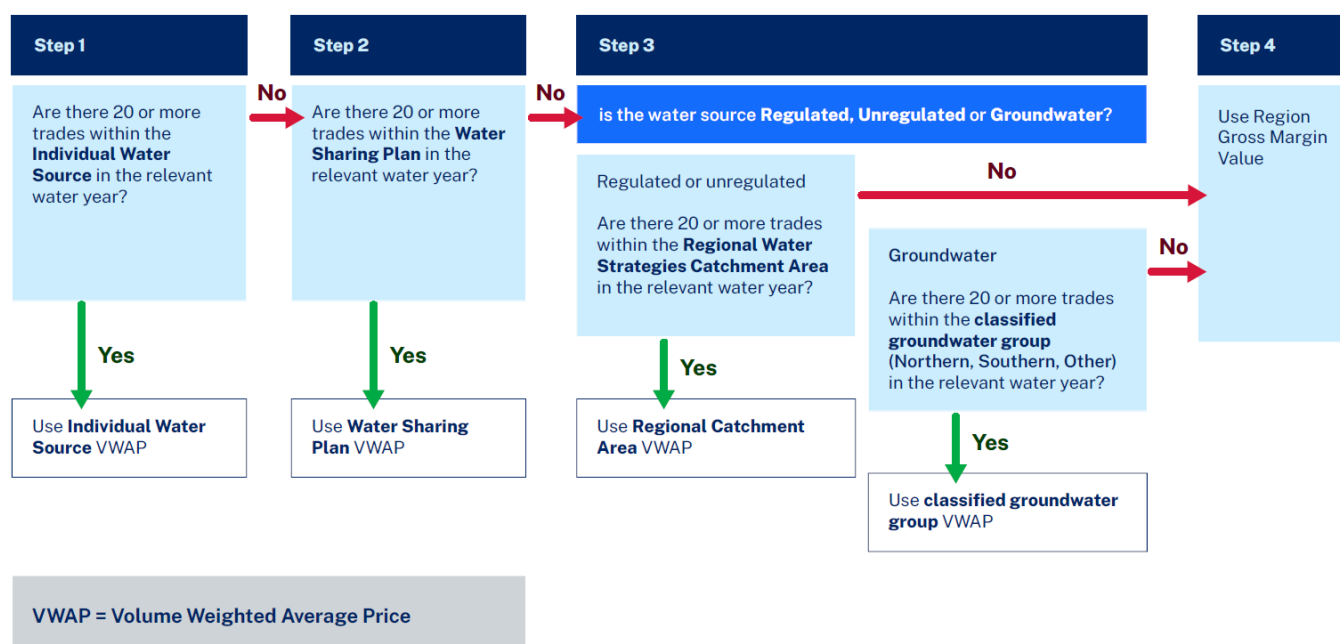


Table 1. Gross margin values

Region	Gross Margin Value
Border Rivers	\$475
Gwydir	\$500
Namoi	\$475
Macquarie	\$450
Western	\$350
Lachlan	\$350
Murrumbidgee	\$300
Murray	\$300
Far North Coast	\$175
North Coast	\$175
South Coast	\$150
Greater Hunter	\$150
Greater Sydney	\$150

Comparison of the two methods

Table 2 illustrates the values derived from applying the current and proposed new method in a selection of water sources over the 2022/2023 financial year.

Table 2. The difference calculated between the current and proposed method for valuing water in a range of water sources

Water source	Water sharing plan	Water region	Value using current method (per ML)	Value using new method (per ML)	Difference between the methods
Barwon Darling Unregulated River	Barwon Darling Unregulated River (2012)	Western (Unregulated)	\$29 based on trades in the individual water source (<20 trades)	\$350 based on gross margin value	\$321
Mooki River	Namoi and Peel Unregulated Rivers Water Sources (2012)	Namoi (Unregulated)	\$50 based on published water entitlement charge (<20 trades)	\$475 based on gross margin value	\$425
Hunter Regulated River	Hunter Regulated River Water Source (2016)	Greater Hunter (Regulated)	\$115 based on trades in the individual water source (<20 trades)	\$150 based on trades in the individual water source	\$35
Murrumbidgee Regulated River	Murrumbidgee Regulated River Source (2016)	Murrumbidgee (Regulated)	\$67 based on trades in the individual water source ($\geq$ 20 trades)	\$70 based on trades in the individual water source	\$3

Fact sheet

Water source	Water sharing plan	Water region	Value using current method (per ML)	Value using new method (per ML)	Difference between the methods
Border Regulated River	NSW Border Rivers Regulated River (2009)	Border River (Regulated)	\$103 based on trades in the individual water source (≥ 20 trades)	\$102 based on trades in the individual water source	\$1
Peel Regulated River	Peel Regulated River Water Source (2010)	Namoi (Regulated)	\$43 based on trades in the individual water source (<20 trades)	\$150 based on trades at the Regional Water Strategy area	\$107
Lower Gwydir Groundwater Source	Gwydir Alluvial Groundwater (2020)	Northern	\$98 based on trades in the individual water source (≥ 20 trades)	\$98 based on trades in the individual water source	NIL
Alstonville Basalt Plateau Groundwater Source	North Coast Fractured and Porous Rock Groundwater (2016)	Other	\$50 based on trades in the individual water source (<20 trades)	\$150 based on trades in the amalgamated groundwater sources	\$100
Lower Lachlan Groundwater Source	Lachlan Alluvium Groundwater (2020)	Southern	\$36 based on trades in the individual water source (<20 trades)	\$350 based on trades in the individual water source	\$314

Fact sheet

Water source	Water sharing plan	Water region	Value using current method (per ML)	Value using new method (per ML)	Difference between the methods
Belubula Valley Alluvial Groundwater Source	Lachlan Alluvium Groundwater (2020)	Southern	\$10 based on published water entitlement charge (0 trades)	\$150 based on trades in the water sharing plan area	\$140

Why the proposed new method is better

The proposed new method uses publicly available sources of information to derive economic values and establish the best balance between robust economic principles, accuracy, and practicality.

In economics, the value of water reflects the benefit received from its use, incorporating household consumption, food production, industry and commerce, agriculture, energy production, recreation and tourism, environment and ecosystems, cultural and Indigenous value, and water management.

The new method better reflects the value gained through illegally taken water as:

- Water market prices represent the willingness of water users to pay for water. These prices are publicly available and provide a suitable indication of the value of illegally taken water.
- Temporary trade prices represent the cost avoided by water users that illegally take water.
- Gross margin values estimate the producer profit from water use. This is the best indicator of the value of illegally taken water where the water market fails. Gross margin values are based on approximations of business costs and revenues for producing irrigated crops.