

Annual Report on Implementation of Non-urban Water Metering for Northern Victoria

2019



Acknowledgment

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.



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All Basin states and the Australian Government have committed to a Basin Compliance Compact (the Compact), which was endorsed by the Council of Australian Governments in December 2018.

This report fulfils Victoria’s commitment under Compact action 3.7 *reporting annually on progress with the implementation plan, including the relative proportion of take via AS4747 meters, interim verified meters, unverified meters, and unmetered take.*

In 2019, the Department of Environment, Land Water and Planning (DELWP) and water corporations with non-urban customers have implemented metering commitments in the Compact, and water corporations have continued to provide high quality non-urban metering services.

In northern Victoria these water corporations are Coliban Water, Goulburn Murray Water (GMW), Grampians Wimmera Mallee Water (GWM) and Lower Murray Water (LMW).

Implementation of Compact commitments

DELWP commenced a review of the Victorian non-urban water metering policy in October 2018 to understand the implications of adhering to the requirements in the Compact. Completed in June 2019 the review involved several stages:

- a stock-take of the current metering assets in Victoria
- a gap analysis of the existing metering policy and the Compact requirements
- a regulatory impact assessment of complying with the Compact requirements
- recommendations on changes to the existing metering policy and exemptions from the Compact requirements where the costs to implement outweigh the benefits.

The review confirmed that Victoria is already meeting the metering requirements of the Compact where the benefits outweigh the costs.

To confirm and to refresh the state’s policy on non-urban water metering, a revised policy is being prepared, which will supersede the existing policy and state implementation plan. DELWP, in revising the policy has consulted with key stakeholders and is currently finalising the policy pending ministerial approval.

Water corporations are updating their metering action plans to align with the revised policy directions and achieve greater state-wide consistency (see Figure 1).

When the policy is finalised a statement will be published on DELWP’s website that describes exemptions from the metering requirements of the Compact due to the risks being manageable or the costs outweigh the benefits.



Figure 1. Non-urban water metering is guided by state and national policies

Continued provision of non-urban water metering services

In Victoria water corporations install, own, maintain and read non-urban water meters.

The four water corporations listed above manage 48,035 non-urban water meters covering about 67 per cent of non-urban customer service points (Table 1).

About 45 per cent of meters meet the goal of ± 5 per cent error set via the national framework for non-urban metering (2009) (the National Framework). At present 1,761 meters of these meters are documented as meeting all the requirements of the AS4747 standard for non-urban water metering, with the remainder being of an interim standard.

The National Framework recognised that due to a lack of meters approved by the National Measurement Institute as meeting the AS4747 standard (pattern approved), the responsible authorities would have to adopt interim standards that were likely to meet ± 5 per cent error when installed. In Victoria this means the meter has at

least a manufacturer's certificate of accuracy of ± 2.5 per cent error and has been installed to manufacturer's specifications.

Table 1. Meter numbers in northern Victoria

Category	Number of meters
AS4747 Compliant	1,761
Interim standard, including pattern approved meters and modern open channel meters	19,805
Exempt, grandfathered, other	26,469
Total	48,035

The National Measurement Institute pattern-approved the first meter for full flowing pipes in 2014 and no open channel meters are pattern-approved as at September 2019. About 85 per cent of meters in Victoria (excluding small meters equal to or less than 50mm in diameter) were installed before 2014. The low number of fully AS4747 compliant meters in Victoria is because of the historic lack of pattern-approved meters and the relatively high cost of the available AS4747 compliant meters.

Interim standard meters may be as accurate and reliable as AS4747 compliant meters, including installations that have used pattern approved meters, modern open channel meters¹ in GMW's modernised irrigation systems, or where other modern interim standard meters have been installed that may be pattern approved by the National Measurement Institute in future.

The most accurate meters are installed on the service points that take the most water. In 2018/19, LMW supplied 129 GL to customers in irrigation districts and 465 GL was diverted by private diverters². Water supplied to irrigation districts is metered at the bulk offtake and at the irrigator's service point. At least 418 GL (90 per cent or greater) of all water diverted by LMW private diverters in 2018/19 is reported daily via telemetered flow meters that are either AS4747 compliant or of interim standard.

About 80 per cent of water used by GMW's rural customers is in supply systems including irrigation districts that have the most accurate meters and greatest level of monitoring, 9 per cent is taken directly from regulated streams, 3 per cent from unregulated surface water and 8 per cent from groundwater. These customers use on average approximately 1,400,000 ML per year³.

Coliban Water and GWM Water operate distribution systems that supply relatively small amounts of water. These systems are metered accurately at bulk offtakes.

Diverters in unregulated surface water and groundwater systems also comprise a relatively small volume of water take - water taken from unregulated systems is less than 2 per cent of that taken in the regulated systems⁴ and groundwater and use in northern Victoria in 2016/17 was 186.5GL⁵. Meters are generally of an interim standard, ranging from modern pattern approved meters with telemetry to older mechanical meters read manually. However, water use is generally a fraction of entitlement volume, and meters are used only for compliance and not billing.

Accurate meters are only one component of a compliance and water accounting system that provides confidence in the integrity of water markets and that 'one person's megalitre is the same as someone else's'. Other important components of Victoria's compliance and accounting system are that:

- meters are read, inspected and maintained by water corporation staff⁶
- about 27,138 meters or over half of non-urban meters have telemetry that monitors the water take of many high volume users in real time and sends data electronically to water corporations
- bulk water measurement facilitates accounting and has a high level of public disclosure via published annual water accounts and water corporation annual reports that are tabled in parliament

1. Rubicon slip meters used in GMW irrigation modernisation projects are designed and built to an interim standard and have undergone pattern approval testing that has demonstrated their accuracy, however meter testing facilities in Australia do not have the capability to complete all the tests needed for the National Measurement Institute to pattern approve these meters.
 2. Lower Murray Water Annual Report 2018/19 (draft)
 3. Usage based on previous four years. Excludes environmental water deliveries.

4. Victorian Submission to Annual Transitional Period Water Take Report 2017/18 (Draft)
 5. Victorian Water Accounts 2016/17, GMW and GWM licensed and domestic and stock groundwater use
 6. Victoria has reported annual compliance statistics for northern Victoria in 2018/19, which includes data on meter reads and telemetered meters (Compact Action 1.2c).

- automated control systems in many modernised irrigation districts give water corporations accurate information about deliveries and losses, and prevent people from ordering more water than they are authorised to take.

Non-urban water metering priorities in 2019/20

Water corporations will:

- continue to provide high quality non-urban metering services, and
- implement their metering action plans including actions relating to management of meters, meter upgrades and meter data.

DELWP will provide state level coordination of actions to implement the updated policy and metering action plans, including developing the means to report more easily and consistently on meters across the state and the amount of water measured by different categories of meters.

Glossary

AS4747-compliant meter – a water meter that has been either pattern approved or verified in compliance with the processes and procedures outlined in AS4747 – Meters for Non-Urban Water Supply (Standards Australia, 2013).

Bulk water meter – a meter for measuring the flow under the approved bulk entitlement metering program.

Interim standard — is a standard under which an installed water meter is likely to meet the $\pm 5\%$ accuracy range and which has a manufacturer's certificate of accuracy of $\pm 2.5\%$ and has been installed to manufacturer's specifications.

Pattern approval – is a process for verifying the accuracy of a water meter, where the National Measurement Institute examines the pattern (design) of a meter prototype against the requirements of AS4747.

Telemetry - involves automatically recording data and sending it electronically from the meter to another place for monitoring and analysis.

Verification – a process or procedure for independently assessing the accuracy of a meter. This can be done in a laboratory to test the meter only, or in the field to test the meter performance in existing conditions.