

Recommendations report

Review of the NSW non-urban metering framework

August 2024



Acknowledgement of Country

The NSW Department of Climate Change, Energy, the Environment and Water acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and we show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.



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Executive summary



1

Accurate, reliable and tamper-evident measurement of water take from our shared water resources is core to rebuilding trust and integrity in water management in NSW. This is critical to enable informed decisions and policies to be made when balancing competing demands for water and protecting the environment, particularly in the face of extreme climate challenges.

In 2018, introduction of the NSW non-urban metering framework marked a significant step forward in best practice water management by improving the standard and coverage of non-urban meters across NSW. Under the framework, the vast majority of all licensed water take capacity must be fitted with accurate, auditable and tamper-evident meters.

However, the rollout of these metering reforms has been plagued by significant delays, despite widespread support for improved measurement.

Approximately 40% of licensed water take in NSW is not yet measured in compliance with the metering reforms. While the majority of licensed water entitlement in NSW is held by a relatively small proportion of water users, best available data indicates that around 9,000 works associated with entitlements of 100 ML or greater do not yet have accurate, reliable and tamper-evident meters in place.

One of the main obstacles has been a shortage of duly qualified persons (DQPs) to install and validate metering equipment. Prescriptive regulatory requirements, technological challenges and high cost burdens on smaller water users are creating further barriers.

While these issues have created genuine barriers for some water users, others have made no real attempt or demonstrated commitment to meet their legal obligations. This wilful non-compliance cannot be tolerated.

On the current trajectory, it could take another 15 years to achieve the overarching policy goal to ensure the vast majority of licensed water take in NSW is metered. This poses significant risks to both water resource management and meeting the commitment under the Murray–Darling Basin Compliance Compact that all take via water entitlements is metered by June 2025.

To expedite the metering reforms and reinforce community trust that water is being lawfully taken, it is critical that larger volume and high-risk water users are compliant as soon as possible. By removing barriers to compliance and focusing available resources on this cohort, we aim to ensure that 95% of licensed water take in NSW will be accurately metered by the end of 2026, if not sooner.



This requires targeted efforts to provide necessary support, clear communication and robust enforcement measures. To achieve this several key reforms are recommended, including:

- **reprioritising demand based on risk** to ensure government resources and DQPs are focused on installing meters where they are needed most. This involves providing a short extension to compliance deadlines for coastal water users and setting less prescriptive measurement methods for smaller and low-risk water users
- **addressing barriers to increase meter installation and validation rates** by providing better training and support for the DQP workforce, improving the systems they use, reviewing revalidation requirements and broadening and expanding the potential workforce
- **supporting integrity in water resources management and strengthening the Natural Resources Access Regulator's (NRAR) compliance approach** by enabling more effective use of compliance and enforcement tools, ensuring the law can be fully enforced and sending a strong signal that there will be consequences for persistent non-compliance.

While there are just over 16,000 works in use by smaller volume and low-risk water users, their water take accounts for less than 5% of the total volume of licensed entitlement in the state. Requiring large numbers of smaller or low-risk water users to meter their works to the current standard is creating a demand for meter installations that cannot be met by the current market of active DQPs.

Removing prescriptive measurement requirements for smaller and low-risk water users will speed up implementation and ensure that DQPs can focus on the larger, higher-risk water users who represent the majority of water take. While smaller and low-risk water users will be given the flexibility to install cheaper measurement options, they will still be required to record and report their licensed water take to ensure accountability and transparency. This strategic reallocation of resources will help ensure that the vast majority of licensed water take in NSW is measured, recorded and reported by December 2026. It also upholds the policy objective to minimise undue costs on small, low-risk water users.

These proposed changes will speed up implementation by at least a decade by:

- making it quicker, easier and simpler for water users to understand and comply with regulations
- making it cheaper for smaller and low-risk water users to comply
- ensuring those who wilfully do not comply can be held to account.

Implementing these recommendations requires a concerted effort from both government and water users. Some interventions will require further consultation, including changes to the Water Management (General) Regulation 2018 (the Regulation) and policy adjustments. System enhancements and careful planning will also be needed to ensure support systems are in place, as well as clear communication strategies.

Robust monitoring and reporting mechanisms will be put in place to track progress. The department will develop indicators that can be publicly reported each quarter to indicate whether progress is on track. If installation rates do not increase as anticipated, more direct government intervention may be pursued from December 2025.

Acknowledging the valuable contributions of stakeholders, the recommendations (Table 1) are designed to bring significant and lasting improvements to water resource management.

Achieving sustainable water management hinges on collective action and a shared commitment to integrity. Accurately measuring and monitoring our water take becomes even more critical as we face increasingly extreme climate challenges. We cannot effectively manage what we cannot measure. Implementing these recommendations is vital to ensure a sustainable future for NSW.

Summary of Recommendations

Table 1. Summary of recommendations

	Reprioritise demand based on risk
Remove metering requirements for ‘unintended’ and inactive works	
• Amend the Regulation to: – reframe the current ‘inactive works’ provisions to ensure the mandatory metering equipment condition does not apply to works that are not being used to take licensed water – not require approval holders to physically modify works to make them incapable of taking water – enable the Minister to amend a water supply work approval to reflect the status of approved works, including whether they are being used to take licensed water. • Impose a condition on all licences prohibiting the take of water by works that are indicated on the approval as not being used to take licensed water.	
Simplify requirements for smaller volume and low-risk works	
• Amend the Regulation to require works (excluding surface water pumps with a diameter of 500 mm or more) which are nominated by licences with a cumulative share component of more than 15 ML per year, but less than 100 ML per year (or equivalent), to be fitted with a pattern approved meter by 1 December 2027 or the renewal date of the work approval whichever is the later date (in lieu of the current metering requirements for these works). Validation by a duly qualified person and installation of a local intelligence device will be optional for these works. • Amend the Regulation to exempt works (excluding surface water pumps with a diameter of 500 mm or more) that are nominated by access licences with a cumulative share component of 15 ML per year or less (or equivalent) from the mandatory metering condition. Note, meters are required if trading water. • Amend the Access Licence Dealings Principles Order 2004 to ensure trade restrictions reflect appropriate metering requirements (including to refer to AS4747). • Amend the Regulation to require all surface water and groundwater works nominated by licences with a cumulative share component of 100 ML per year or more (or equivalent) to have telemetry enabled to transmit data to the relevant specifications (unless otherwise exempt). • Amend the Regulation to refine appropriate measurement standards for small works and works associated with low volume share components in at-risk water sources.	
Extend coastal compliance dates	
• Amend the Regulation to extend the temporary metering exemption for larger volume coastal works from 1 December 2024 to 1 December 2026. This will prioritise resources towards high risk works across the state and larger volume water users in the Murray–Darling Basin, which are already required to have a meter.	



Increase meter installation and validation rate

Support and expand the duly qualified person workforce

- Amend the Regulation to base DQP eligibility on recognition of broader competencies and experience to expand the DQP workforce.
- Establish a collaborative partnership with an appropriate provider to develop a NSW-specific meter and local intelligence device (LID) installer course, as an alternative to the existing certified meter installer course.
- Invest in system improvements to the DQP portal helping to streamline installations.
- Develop a business case to examine the costs and benefits of an 'opt-in' government program that would coordinate the installation and/or validation of metering equipment by DQPs on behalf of water users.
- Invest in additional resources to support direct education and support to water users, enabling better understanding of what to expect when engaging a DQP.
- Amend the revalidation requirements for AS4747 compliant meters from 5-year intervals to 10 years after initial installation and every 5 years thereafter, to ensure revalidation requirements do not create unnecessary barriers to ongoing compliance and exacerbate market constraints.
- Remove in-situ accuracy testing as a standard revalidation requirement to align with national requirements.

Resolve technical issues with local intelligence devices and telemetry

- Invest additional resources to enable targeted outreach and support to DQPs to improve the quality and reliability of metering equipment installations, reduce errors and address the current backlog of defects.
- Commission an expert review to address system and equipment issues affecting the LID rollout and the reliability of transmitted information. This will be structured in 2 parts:
 - develop step by step guides for selecting, installing and configuring equipment that has been assessed as meeting government's specifications
 - commission a broader expert review to identify systemic improvements to data logging, telemetry requirements and associated data systems.





Support integrity in water resources management

Resolve the regulatory gap around the source of truth for volume of take

- Acknowledge the need for an enforceable obligation for licence holders to record and report water take in a way that establishes a single time-bound source of truth for the volume of water taken against a licence.

Regulation of the DQP workforce

- Investigate legislative or regulatory options, if required, to ensure integrity in provision of DQP services in the long term.

Enable more effective use of enforcement tools

- Clarify the 'faulty equipment' provisions in the Act and/or Regulation, including to enable more reasonable and timely periods for repairing and replacing faulty metering equipment to ensure requirements are practical and provisions are not misused. This may include:
 - ensuring that processes have regard to potential temporary losses in telemetry connection
 - amending the timeframe for requiring replacement and repair of faulty metering equipment in light of duly qualified person market constraints.
- Identify and address opportunities to enhance enforcement tools to ensure effective metering compliance.



Alternative measurement options for some forms of take

- Amend the Regulation to enable use of more practical methods to measure overland flow that is taken under an unregulated access licence from multiple intake points or by intercepting diffuse flows, including the use of storage measurement equipment instead of non-urban metering equipment.
- If required, further scope and determine practical means of measuring and/or accounting for different modes of water delivery, including environmental water delivery, subject to further consultation with water users.

Purpose of the review

2

Implementation of the non-urban metering reforms has been slower than anticipated. The purpose of this review is to identify ways to accelerate the implementation of the NSW non-urban metering reforms by identifying practical changes to the rules that will:

- help deliver the reform faster than the current trajectory
- create opportunities to reduce costs
- make the rules easier to understand, implement, comply with, and enforce
- make the system work more efficiently.

Background

Under the Water Reform Action Plan (2017), the NSW Government committed to implementing a robust metering framework to improve the standard and coverage of non-urban water meters across NSW, to be implemented in stages over 5 years.

The NSW non-urban water metering framework includes the:

- NSW Non-Urban Water Metering Policy (the policy)
- metering related provisions of the Water Management (General) Regulation 2018 (the Regulation)
- metering related provisions of the *Water Management Act 2000* (the Act).

The purpose of the framework is to improve the standard and coverage of non-urban water meters in NSW. It is guided by 4 objectives that operationalise the ‘no meter, no pump’ principle.

These objectives are to ensure that:

- the vast majority of licensed water take is accurately metered
- meters are accurate, tamper-evident and auditable
- undue costs on smaller water users are minimised
- metering requirements are practical and can be implemented effectively.

About this report

This report details the outcomes and recommendations of the review, including feedback provided through the public consultation. It draws directly from the discussion paper, [Review of the non-urban metering framework – Issues and options paper](#) published in October 2023, which outlined the challenges and barriers to implementing reforms and presented various options to address them.

During the review process – described in Table 2 – stakeholders were encouraged to provide their feedback and opinions on the questions posed in the discussion paper.

Feedback gathered during the public consultation period indicated support for initiatives aimed at improving metering and measurement of non-urban water take. Many of the options proposed in the discussion paper received support and additional actions were identified for government review. Further details on the feedback received during the public consultation are available in the [What we heard report – Review of the non-urban metering framework](#). The recommendations outlined in this report are directly informed by this feedback.



Table 2. Summary timeline of the review process

Date	Summary of the review process
June to July 2023	• Review commissioned. • Cross agency Steering Committee established with representatives from: – NSW Department of Climate Change, Energy, the Environment and Water – Natural Resources Access Regulator (NRAR) – WaterNSW. • Identification of key issues known to be hampering metering rollout.
August 2023	• Targeted consultation with stakeholders to confirm key issues with the non-urban metering framework and identify draft options for broader consultation.
October to November 2023	• Publication of the <i>Review of the Non-urban metering framework – Issues and options paper</i> outlining the key components of the framework, challenges and potential solutions. • Public consultation period spanning 30 October to 26 November 2023 allowing water users, DQPs, water user groups and peak stakeholders and community members to provide feedback via: – online public and targeted information sessions – online survey – written submissions.
December 2023 to January 2024	• Review of public submissions, survey responses and webinar feedback received during the consultation period.
February 2024	• Publication of <i>What we heard report – Review of the non-urban metering framework</i> summarising feedback received during consultation.
March to June 2024	• Drafting of the <i>Recommendations report – Non-urban metering review</i> based on findings and insights gathered during the review process. • Recommendations report sent to the Minister for Water for review.

Key issues raised during consultation

- **Cost of compliance** particularly for low-risk water users. Feedback supported exemptions or the ability for low-risk water users to use less prescriptive measurement pathways and advocated greater cost sharing – with government – of the implementation of the reforms.
- **Shortage of duly qualified persons** has impacted water users’ ability to comply within the required timeframes.
- **Need for greater flexibility** in the ways water users can comply with the intent and objectives of the non-urban metering framework. This includes a need for more practical means of measuring licensed take of overland flow in unregulated river sources and some modes of environmental water delivery.
- **Simplification of requirements** to help water users understand their obligations. A key concern is the perceived inconsistency between overlapping rules.
- **Extending the coastal compliance deadline** beyond December 2024 to assess the outcomes of the review and engage directly with coastal water users to ensure they understand their obligations before the compliance deadline (as has occurred in other tranches).

Priorities for reform: A pathway to faster and easier metering rollout

A large flock of birds, possibly terns, is captured in flight across a clear blue sky. Below them, a wetland landscape features a body of water reflecting the sky, with green reeds and grasses in the foreground and middle ground. A few bare, leafless trees are visible on the right side of the frame. The overall scene is bright and natural.

3

The review has identified 3 main priorities for reform aimed at improving and accelerating compliance rates. This includes:

- **reprioritising efforts based on risk** to ensure government resources and DQPs are focused on installing meters where they are needed most. This involves providing a 2-year extension to compliance deadlines for coastal water users and setting less prescriptive metering methods for smaller and low-risk water users
- **addressing barriers to increased meter installation and validation** by providing better training and support for the DQP workforce, improving the systems they use, reviewing revalidation requirements and broadening and expanding the potential workforce
- **supporting integrity in water resource management and strengthening NRAR's compliance** approach by enabling more effective use of compliance tools ensuring the law can be fully enforced and sending a strong signal that there will be consequences for persistent non-compliance.

The following key principles have been applied in proposing adjustments to the regulatory settings:

- apply a risk-based approach by focusing efforts where water take poses the greatest risk to the water source and its management
- focus on desired outcomes, rather than prescriptive requirements that may create barriers to compliance
- provide water users with options for compliance where possible while maintaining the integrity of the system
- utilise the capabilities of the Natural Resources Access Regulator such as remote intelligence gathering and risk-based proactive audit to enhance regulatory effectiveness.





Reprioritise demand based on risk

Summary

There are currently high levels of non-compliance with metering requirements, including because the demand for meter installation required by the Regulation far exceeds the capacity of the market. Closer alignment between metering and measurement requirements and the risk of water take, particularly for smaller volume and low-risk water take, will enable the vast majority of licensed water to be metered much sooner than the current trajectory.

The review recommends revising current metering requirements in order to:

- ensure that metering obligations only apply to works that take licensed water
- ensure that available DQPs are focussed on higher risk and larger volume water take across NSW
- provide lower cost measurement options for smaller and low-risk water take, to better reflect the risk of that take.

In line with the national non-urban metering requirements (Metrological Assurance Framework 2) this takes a risk-based approach that maximises the measurement of water taken for high-risk water users and avoids imposing undue costs for low-risk water users.

A summary of the proposed new metering and measurement requirements is set out in Table 3 below, and further detailed in the following sections. However, it should be noted that even where the mandatory metering condition does not require installation of AS4747 compliant meters, there may still be advantages to their use, such as billing incentives and access to water markets.



Table 3. Summary of recommended metering and measurement requirements

Works	Measurement standard	By when*	Change from current requirements
All surface water pumps ≥500 mm	AS4747 compliant meter DQP validation LID and telemetry	Immediately	No change to measurement standard or timing.
All works nominated by total entitlement ≥100 ML, unless otherwise exempt	AS4747 compliant meter DQP validation LID and telemetry	Inland – Immediately Coastal – 1 December 2026	Groundwater works and surface water pumps in this category with a diameter of less than 199 mm will now need to be telemetry enabled (previously, local intelligence devices did not need to have telemetry capacity). There is no change to timing for inland works. Coastal works have a 2-year deadline extension.
All works nominated by total entitlements of >15 and <100 ML, unless otherwise exempt	Pattern approved meter Mandatory take reporting <i>DQP validation and LID/telemetry optional</i>	Later of 1 December 2027 or renewal of work approval	These works still require a meter, but no longer required to have meters installed and validated by a DQP or be fitted with a local intelligence device. This provides an extension to both inland works (which were overdue) and coastal works (which otherwise would have been required to be metered by 1 December 2024).
Pumps and bores below the size-based thresholds Works nominated by total entitlement ≤15 ML (except surface water pumps ≥500 mm)	No meter mandated (exempt), but meter required if trading water Mandatory take reporting <i>Application to at-risk water sources to be considered further</i>	Not applicable	There is no change for pumps and bores below the size-based thresholds. Works nominated by a low volume share component will no longer be required to be fitted with a DQP installed AS 4747 compliant meter.
Works not taking licensed water (unintended, inactive) Works not nominated by licensed water entitlements	No meter mandated (exempt)	Not applicable	It will be easier for unintended and inactive works to access this metering exemption. There is no change for works not nominated by licensed water entitlements.

* NRAR may direct installation of a meter in specified timeframe if take or reporting related non-compliance is detected

Unintended and inactive works

The current metering exemption for ‘inactive works’ was intended to ensure that works that were not being used to take licensed water did not need to be metered. However, the current exemption may require physical modifications to be made to works to make them incapable of taking water, for it to apply. This places an undue regulatory burden – to either meter or physically modify a work – on these approval holders.

Further, it is currently difficult to identify which works listed on a water supply work approval require a meter. Approvals do not distinguish the works that actively take licensed water from those that do not—including works that are not constructed, derelict, not otherwise used to take water, or which are solely used for basic landholder rights (collectively referred to in this report as ‘unintended works’). These unintended works should not be required to be metered. The current process to update work approvals in this manner also relies on action being taken by approval holders.

There was strong support during public consultation for a new system to clearly identify ‘unintended works’. This will provide a more accurate picture of meter coverage and compliance rates. It will also help reduce confusion regarding metering obligations and enable more efficient and targeted compliance action by NRAR.

Recommendation

- Amend the Regulation to:
 - reframe the current ‘inactive works’ provisions to ensure the mandatory metering equipment condition does not apply to works that are not being used to take licensed water
 - not require approval holders to physically modify works to make them incapable of taking water
 - enable the Minister to amend a water supply work approval to reflect the status of approved works, including whether they are being used to take licensed water.
- Impose a condition on all licences prohibiting the take of water by works that are indicated on the approval as not being used to take licensed water.

Next steps

Develop a more cost-effective, streamlined and efficient method to update and identify how works listed on a work approval are being used, and therefore which works may require a meter.

The process will include a system to enable water users to confirm the appropriate classification of each work, and the Minister to update the approval accordingly.

Administrative or regulatory changes may be required to implement this method.

Further, when the Regulation is amended to clarify this exemption, all approvals will be made subject to a condition to prohibit works identified as ‘unintended works’ from being used to take licensed water. Therefore, if a water user wants to use an unintended work to take licensed water, the approval must first be updated and, unless another exemption applies, the work must be metered.

Amending measurement requirements for smaller volume and low-risk works

Currently, there are a large number of works required to be metered which individually take small amounts of water, and collectively account for a very small proportion of total entitlement. In many cases, the current requirements impose metering costs that appear to be disproportionate to the risk posed by this water take.

It is proposed to amend the current metering requirements for smaller volume and low-risk works to ensure that this group does not compete with larger users for limited DQP services, and to reduce costs for these smaller and low-risk users. The ‘no meter, no pump’ principle will effectively be updated to a ‘no measurement, no pump’ principle that can more efficiently deliver effective resource management. Applying a ‘no measurement, no pump’ principle will require all water users taking licensed water to measure and report their water take. However, only larger volume and high-risk works – accounting for approximately 95% of licensed take across the state – will be required to have meters installed and validated by a DQP in compliance with AS4747 and a local intelligence device.

This will make it easier, cheaper and faster for users of smaller works to install an appropriate measurement device to a standard that better reflects risk of their water take. This would be supported by strengthened reporting requirements, and education and enforcement of existing reporting obligations. Education and enforcement have significantly lifted reporting compliance in the past.

Recommendation

- Amend the Regulation to require works (excluding surface water pumps with a diameter of 500 mm or more) which are nominated by licences with a cumulative share component of more than 15 ML per year, but less than 100 ML per year (or equivalent), to be fitted with a pattern approved meter by 1 December 2027 or the renewal date of the work approval whichever is the later date (in lieu of current metering requirements for these works). Validation by a duly qualified person and installation of a local intelligence device will be optional for these works.

Taking a consistent approach to telemetry requirements

Currently, groundwater works and surface water pumps with a diameter of 199 mm or less are required to be fitted with an AS 4747 compliant meter and local intelligence device, but do not require telemetry. However, installations to date show that water users required to install a local intelligence device, but not to connect to telemetry, are opting to voluntarily connect to telemetry, having regard to market prices and reduced reporting burdens associated with telemetry.

Given that the benefits of telemetry outweigh its costs in these circumstances, and to streamline reporting requirements, telemetry should be required for this class of works.

Recommendation

- Amend the Regulation to require all surface water and groundwater works nominated by licences with a cumulative share component of 100 ML per year or more (or equivalent) to have telemetry enabled to transmit data to the relevant specifications (unless otherwise exempt).

New low volume exemption

The Act requires all water supply works to be metered unless an exemption applies. Exemptions have been established for types of water take that are considered to be 'low-risk'. This includes:

- works that take water solely for basic landholder rights
- works that are not nominated by water access licences
- works that are inactive
- single surface water pumps less than 100 mm in diameter and single groundwater bores with external casing less than 200 mm in diameter, and multiple works that fall below cumulative size thresholds.

The review has identified another type of water take that is considered to be low risk, being works associated with entitlements that only take a low volume of water. It is recommended to establish a new exemption based on a low volume threshold, in the order of up to 15 ML per year of cumulative share component (or equivalent). This exemption could apply to pumps or bores with capacity to take material amounts from a water source due to their size, but which nevertheless have a pattern of use that is low risk.

This would:

- align with the volume of take generally associated with works that qualify for the existing work size exemption
- be consistent with exemptions in other jurisdictions within the Murray–Darling Basin
- be below the volumes set for minimum annual charges for water pricing purposes
- still meet the policy objective of accurately metering the vast majority of licensed entitlement in NSW.

This exemption will not apply to high risk, large surface water pumps with a diameter of 500 mm or more. Further, the current trading requirements will be updated to ensure they reflect updated metering standards and prevent the intention of this exemption being undermined by trade. Exceptions to this exemption may apply based on other factors, such as the location of take being in at-risk water sources (discussed further below).

Recommendation

- Amend the Regulation to exempt water supply works (excluding surface water pumps with a diameter of 500 mm or more) that are nominated by access licences with a cumulative share component of 15 ML per year or less (or equivalent) from the mandatory metering condition. Note, meters are required if trading water.
- Amend the Access Licence Dealings Principles Order 2004 to ensure trade requirements reflect appropriate metering standards (including to refer to AS4747).

Reconsider risk defined by water source

Universal metering requirements aim to enhance water resource management and accountability but avoid imposing undue costs on water users. Currently, the exemptions based on work size do not apply in 13 surface water sharing plans, 54 groundwater sources and one groundwater management zone identified as 'at risk' in the Regulation. This means there is no recognition of the reduced risk posed by smaller works in these areas.

The inconsistent application of work-size exemptions across water sources has led to confusion, and potentially unwarranted costs on some water users. This inconsistency needs to be reconsidered having regard to the varied risk profile associated with different types of works.

Further analysis and consultation with water users is recommended to determine the appropriate measurement or metering methods for smaller works or lower volume take in 'at risk' water sources. This could involve less prescriptive metering requirements, if the cost of requiring AS4747 compliant meters outweighs the benefits of the approach. However, irrespective of metering requirements, water users will still be required to record and report their licensed water take, consistent with the 'no measurement, no pump' principle.

Recommendation

- Amend the Regulation to refine appropriate measurement standards for small works and works associated with low volume share components in at-risk water sources.

Next steps

Conduct further work and consultation to determine appropriate measurement standards for low-risk users across different water sources, promoting continued adoption of AS4747 compliant meter requirements where warranted.

Extend deadline for larger volume coastal works

A risk-based approach prioritises high risk and larger works in inland NSW, as these water users account for ~80% entitlement state-wide. Supporting compliance among this group of water users as a priority will enable success of the reforms to be achieved sooner.

Large pumps in coastal areas are already required to have meters installed on their works. Other coastal works are currently required to have meters installed by 1 December 2024. Coastal works that take larger volumes are associated with ~12% of entitlement state-wide. It is proposed to extend this compliance date by two years until 1 December 2026 to prevent DQP resources being diverted away from higher priority, high risk and larger volume inland works. This is crucial to meet commitments under the Murray–Darling Basin Compliance Compact.

The extension represents a strategic compromise between targeting risk and ensuring that no water user has an excuse to not comply with their obligations. It would be supported by targeted engagement with coastal users to ensure they understand their obligations well before the compliance deadline, which is an approach that has been demonstrated by NRAR to significantly improve compliance. This extension of time comes with the expectation that these users will be compliant by the extended deadline, rather than waiting for it to pass before acting.

Recommendation

- Amend the Regulation to extend the temporary metering exemption for larger volume coastal works from 1 December 2024 until 1 December 2026. This will prioritise resources towards high risk works across the state and larger volume works in the Murray–Darling Basin, which are already required to have a meter.





Increase meter installation and validation rate

Summary

The open market approach to metering equipment supply and installation by DQPs has not worked well. Addressing the challenges requires a new, multifaceted approach. The previous section outlined recommendations to enable less prescriptive measurement requirements for smaller and low-risk water users to reduce demand for meter installations that cannot be met by the current market of active DQPs, ensuring that they can focus on the larger, higher-risk water users representing the majority of water take.

In addition, interventions are needed to support the expansion of the DQP market, enhance training programs and resolve technical issues. If measures to increase and support the DQP workforce do not accelerate compliance rates by July 2025, further government intervention may be necessary to keep the metering rollout on track.

Expanding the DQP market and improved training framework

It is recommended to introduce 2 new pathways for individuals to qualify as DQPs:

- **competency-based:** allow individuals with relevant skills and competencies, such as plumbers, electricians or similar trades, to become DQPs after completing a shorter induction program that recognises their existing expertise
- **new entrant training:** offer comprehensive training and coursework for individuals regardless of their trade background, enabling more people to become DQPs after completing a proposed new meter installer course.

Comprehensive training courses that cover all aspects of metering equipment supply, installation and maintenance will ensure DQPs are able to rectify errors quickly and efficiently. Other training interventions should include actions to:

- provide additional support services for DQPs and water users to assist in troubleshooting and resolving technical issues quickly and efficiently
- ensure programs address technical issues, such as configuring local intelligence devices (LIDs) and ensuring data reliability
- diversify training providers and encourage course innovation
- streamline administrative processes and reduce the duration and costs of training for prospective DQPs
- develop strategies to address regional labour market shortages by offering training programs in areas with high demand for DQPs across diverse geographical regions.

Recommendation

- Amend the Regulation to base DQP eligibility on recognition of broader competencies and experience to expand the DQP workforce.
- Establish a collaborative partnership with an appropriate provider to develop a NSW- specific meter and local intelligence device installer course, as an alternative to the existing certified meter installer course.
- Invest in system improvements to the DQP portal helping to streamline installations.

Next steps

- Identify the required skills and competencies to perform the functions of a DQP drawing from relevant professions, for example, registered plumbers.
- Develop a short induction course tailored to the needs of individuals entering the competency-based pathway. The course would cover practical and foundational topics such as navigating WaterNSW systems, understanding metering rules and regulations and basic troubleshooting, to ensure duties can be performed effectively.
- Create a targeted communication and engagement strategy to raise awareness of DQP opportunities among relevant workforces.

‘Opt-in’ coordination program for DQP services

DQPs are crucial to the implementation of non-urban metering and ensuring that water users can find and access DQP services is vital for success. A new government program aimed at coordinating the provision of DQP services could both incentivise and stimulate the DQP market and enhance the accessibility of DQP services.

Recommendation

- Develop a business case to examine the costs and benefits of an ‘opt-in’ government program that would coordinate the installation and/or validation of metering equipment by DQPs on behalf of water users.
- Invest in additional resources to support direct education and support to water users, enabling better understanding of what to expect when engaging a DQP.

Revalidation requirements

The revalidation requirements for meters – particularly in-situ accuracy testing, which is only required in NSW – adds unnecessary demand on DQP services. The requirement to revalidate meters 5 years after initial installation is also likely to further delay the metering rollout by exacerbating the existing supply/demand challenges.

Recommendation

- Amend the revalidation requirements from 5-year intervals to 10 years after initial installation and every 5 years thereafter, to ensure revalidation requirements do not create unnecessary barriers to ongoing compliance and exacerbate market constraints.
- Remove the requirement for in-situ accuracy testing as a standard revalidation requirement to align with national requirements.

Resolve technical issues with LIDs and telemetry

Addressing technical issues with telemetry and LIDs is crucial to ensuring the reliability and accuracy of transmitted water take data. Challenges associated with configuring LIDs, technology failure in the field, limited DQP training and associated administrative burdens are also affecting compliance with metering requirements.

Recommendation

- Invest additional resources to enable targeted outreach and support to DQPs to improve the quality and reliability of metering equipment installations, reduce errors and address the significant backlog of defects.
- Commission an expert review to address system and equipment issues affecting the LID rollout and the reliability of transmitted information. This will be structured in 2 parts:
 - develop step by step guides for selecting, installing and configuring equipment that has been assessed as meeting government’s specifications
 - commission a broader expert review to identify systemic improvements to data logging, telemetry requirements and associated data systems.



Support integrity in water resource management

Summary

Gaps in the reporting of licensed water take is compromising effective water resource management in NSW. Given the high demand on NSW water resources, it is essential for water users and the broader community to have confidence that our water resources are being effectively managed.

Accurate information about water take, including who is using the water, when and where is essential for maintaining integrity of water management systems and fostering community confidence in the regulatory framework. While this does not directly influence the speed of the metering rollout, it remains crucial for maintaining transparency, accountability and credibility in water management, and fair access to water resources across NSW.

Along with improved reporting, removing legitimate barriers to compliance and providing NRAR with a more comprehensive toolkit is anticipated to encourage and incentivise the willing into compliance quicker, make it fairer for others who have done the right thing, and improve NRAR's ability to enforce water laws.

Resolve the regulatory gap around the source of truth for volume of take

Reporting requirements under the current metering framework have not fully addressed gaps in water take data reported to WaterNSW.

All water users are required to record and report water take, regardless of metering requirements, unless the approval is not nominated by a licenced entitlement. However, the current rate of reporting is very low in some water sources, posing challenges to resource management. Inaccurate or incomplete water data compels the department to estimate water take, potentially leading to more conservative and lower available water determinations than would otherwise be required.

Further, the current reporting requirements (via telemetry or otherwise) focus on the volume of water taken by a nominated work. While this data indicates the amount of water taken, when and from where, it does not indicate whether or how much water is associated with each of the licences or basic landholder rights potentially used in connection with the work. Addressing this gap is essential for effective water resource management.

Recommendation

- Acknowledge the need for an enforceable obligation for licence holders to record and report water take in a way that establishes a single time-bound source of truth for the volume of water taken against a licence.

Next steps

Determine the most effective mechanism to implement improved recording and reporting requirements, including review and streamlining of existing requirements to facilitate improved compliance. This will include a trial of a new reporting model that includes water licence holders attesting to the volume of water taken against each licence and confirming the accuracy and currency of the administrative and contact details for the licence each year.

Regulation of the DQP workforce

Currently, the responsibility to regulate DQP conduct and compliance with installation and metering standards falls primarily to the certifying body, with limited Ministerial or government oversight. This limits the government's ability to ensure integrity in the provision of DQP services.

Consultation with DQPs in 2022 found:

- general support for a regulatory framework for the DQP workforce
- many believed the regulator had powers to intervene and regulate the industry
- the importance of education and mentorship as effective means of addressing competency gaps and mistakes.

The appropriateness of additional government powers to oversee and regulate DQP service delivery should be investigated and considered further.

Recommendation

- Investigate legislative or regulatory options, if required, to ensure integrity in provision of DQP services in the long term.

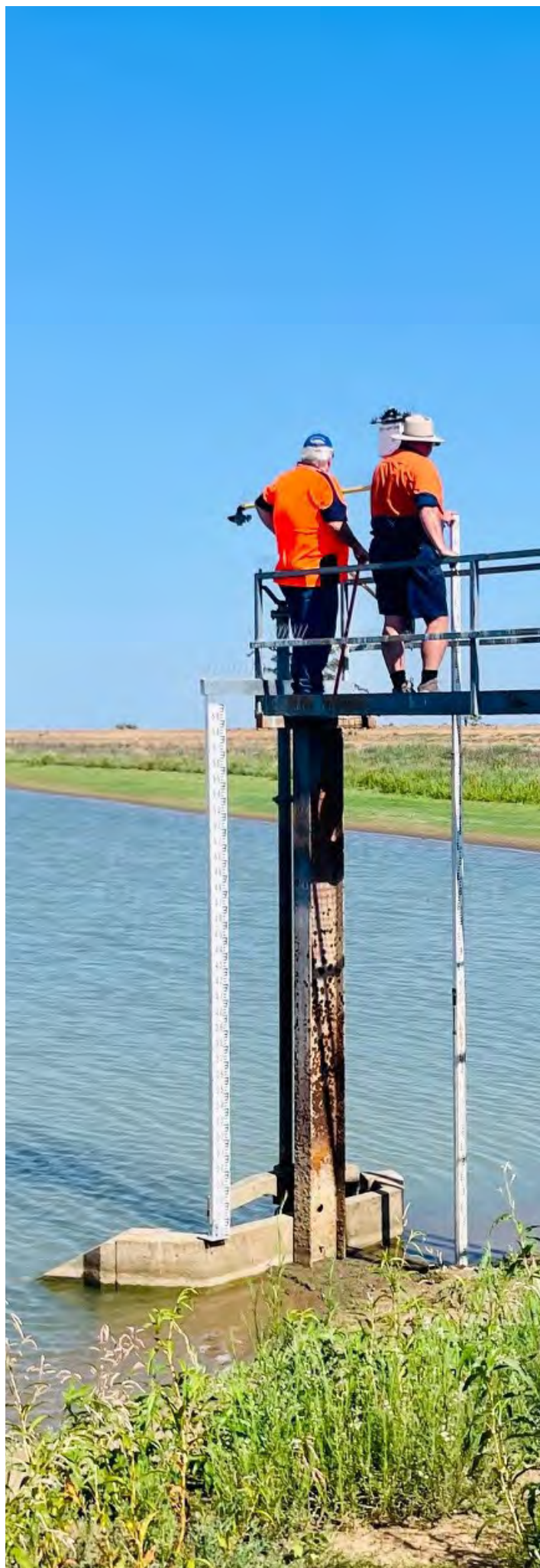
Enable more effective use of enforcement tools

Section 91IA of the Act requires a notice to be given in accordance with regulations when metering equipment is not operating, or not operating properly. Water users have expressed frustration regarding uncertainty about whether frequent LID alarms required compliance with these faulty metering provisions, and that the current notification process set out in the regulation is not practical in all circumstances. This process should be updated to ensure it is practical with regards to the operation of local intelligence devices and telemetry.

Separately, there is an opportunity to provide NRAR with a more comprehensive toolkit. Enforcement powers should be reviewed to identify changes that can be pursued to improve NRAR's ability to enforce water laws and ensure effective metering compliance.

Recommendation

- Clarify the 'faulty equipment' provisions in the Act and/or Regulation, including to enable more reasonable and timely periods for repairing and replacing faulty metering equipment, to ensure requirements are practical and provisions are not misused. This could involve:
 - ensuring that processes address issues such as loss in telemetry connection
 - amending the timeframe for requiring replacement and repair of faulty metering equipment in light of DQP market constraints.
- Identify and address opportunities to enhance enforcement tools to ensure effective metering compliance.





Alternative measurement options for some forms of take

Summary

Certain modes of water delivery may pose challenges for installing metering equipment within the current framework.

Currently, different measurement rules apply to overland flow taken under floodplain harvesting licences and unregulated river licences. Under unregulated river licences, only closed conduit or open channel metering equipment can be used to measure overland flow, which is not always practical. In contrast, under a floodplain harvesting licence, overland flow must be measured through either point-of-intake metering equipment or storage measurement equipment.

There is a need for consistency in measurement methods, especially for unregulated river licence holders who take overland flow from multiple intake points or intercept diffuse flows. These users should be allowed to use storage measurement devices, as is allowed under the floodplain harvesting measurement framework. This would ensure fairness and practicality across different types of licences.

The department will continue to explore where alternative approaches to measuring water delivery are necessary for water users that take water in different ways, including some modes of environmental water delivery if necessary. This will ensure the broader policy objectives are upheld.

Recommendation

- Amend the Regulation to enable use of more practical methods to measure overland flow that is taken under an unregulated access licence from multiple intake points or by intercepting diffuse flows, including the use of storage measurement equipment instead of non-urban metering equipment.
- If needed, further scope and determine practical means of measuring and/or accounting for different modes of water delivery, including environmental water delivery, subject to further consultation with water users.



Implementation of recommendations

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The recommendations outlined in this report aim to address the specific barriers and challenges hindering the metering rollout, with the ultimate goal of ensuring that the majority of licensed water take in NSW is accurately metered.

Some recommendations can be implemented quickly at minimal cost, such as improving support for DQPs which can be implemented without delay. Others require amendments to be made to the Regulation and the Act which typically takes longer. The non-urban metering policy will also need to be updated to reflect the outcomes of this review.

Other recommendations will require further analysis, consultation, system readiness and funding before they can be put into action. Adopting a strategic and phased approach to implementing the recommendations that ensures sustained improvement and commitment to the ultimate goals of these reforms will be crucial.

The immediate implementation priorities for the next 12 months are outlined in the [Implementation Plan at Appendix A](#). This plan identifies the most important actions for accelerating metering compliance rates that should progress without delay. It will be reviewed and updated each year to reflect the next set of implementation priorities, informed by regular performance reporting and stakeholder feedback.

Commitment to ongoing monitoring, review and improvement

The NSW Government will implement robust monitoring and reporting mechanisms to track progress and ensure the effectiveness of the implementation initiatives. By developing indicators that can be publicly reported each quarter, the department can provide transparency and accountability regarding the implementation of metering requirements. These indicators will serve as benchmarks to assess whether progress is on track and whether further intervention may be necessary if metering compliance rates do not meet expectations.



Appendix A – Implementation plan

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The implementation plan outlines the immediate implementation priorities for the next 12-months. These are the most important actions for accelerating metering compliance rates that should progress without delay.

This initial 12-month plan does not reflect all the recommendations in the review report. The implementation plan will be remade each year to reflect the next set of implementation priorities. This will ensure that implementation actions are adaptive and informed by stakeholder feedback and performance monitoring that will be publicly reported each quarter.

It will also ensure that implementation actions are appropriately scoped and resourced to ensure they will deliver on the review outcomes before being progressed.

Table 4. Implementation plan

What we will do	How we will do it	By end 2024	By mid-2025
Change the rules	Draft Regulation amendments for consultation prioritising the recommendations that will have the greatest impact on accelerating compliance rates, including: - expanding definitions of who can provide DQP services to grow the market - staging compliance expectations to focus on larger water users in inland NSW first (includes change to coastal compliance date) - simplifying requirements for smaller volume and low-risk works. <i>Note that Regulation amendments will be progressed in stages to ensure that urgent time-critical changes are not delayed, and resourcing for implementation can be prioritised appropriately.</i>	✓	
	Make and commence highest priority Regulation amendments that give effect to the proposed rule changes and consider stakeholder feedback.		✓
	Update the NSW Non-Urban Water Metering Policy to reflect the new metering rules.		✓
Support duly qualified persons	Stand up a new service to provide in-field support to duly qualified persons to trouble shoot installation issues and address the backlog of defects.	✓	
	Develop step by step guides for selecting, installing and configuring equipment meters and local intelligence devices to make it easier for duly qualified persons and to reduce error rates.	✓	
	Develop a new meter installer course specific to NSW that can then be delivered by a range of providers in order to increase training capacity in the market.		✓

What we will do	How we will do it	By end 2024	By mid-2025
Support and educate water users	Provide water users with the opportunity to have their say on changes to the rules through public exhibition of the draft amended regulations.	✓	
	Engage with water users to help them update their work approvals to reflect which works are taking licensed water and require metering and which do not.	✓	✓
	Engage with coastal water users to ensure that they understand their obligations well ahead of the proposed compliance date.	✓	✓
Improve systems	Enhance systems to reflect the new water supply work categories that make it clear which require metering and which do not.		✓
	Continue to improve systems including the DQP portal to improve functionality and usability.	✓	✓
	Commission an independent expert review of data logging and telemetry requirements and associated data systems.		✓
	Trial reporting arrangements that seek to establish a single time-bound source of truth for the volume of water taken against a licence.		✓
Track progress	Publish quarterly public reports to track progress and ensure the effectiveness of the implementation initiatives which will increase transparency and accountability for progress. <i>Note that if compliance rates do not increase as required, a business case and options for more direct government intervention will be developed towards the end of the first 12 months.</i>	✓	✓

