3 August 2020

Australian Government - Productivity Commission
National Water Reform Inquiry
Lodgement online at water.reform.2020@pc.gov.au

Dear Commissioners

RE: National Water Reform Inquiry

Thank you for the opportunity to provide comments to the Productivity Commission Inquiry into the 2004 Intergovernmental Agreement on a National Water Initiative (NWI) and offer suggestions on how Irrigation Australia considers that the NWI might be improved.

Our submission is focused on aspects of *Water Resource Accounting* contained in the Intergovernmental Agreement on a National Water Initiative, as they relate to the adoption of non-urban water metering, sections *80, 87, 88, & 89.*

These are all matters that the 2017 Commission of Inquiry reviewed and commented on and we submit that little progress has occurred in these sections since the last inquiry.

Irrigation Australia Ltd is a member based, not-for-profit association and is the peak national industry body for the irrigation industry in Australia. Irrigation Australia is also a Registered Training Organisation (RTO 91313) providing training and certification for the irrigation industry. An important part of our work and relevant to our submission to this inquiry is the provision of training and certification for non-urban water meter installers and validators. This qualification is recognised as a Certified Meter Installer and Validator (CMI) or in NSW a Duly Qualified Person (DQP). Currently there are just over 500 certified CMI/DQP in Australia.

As a certifying body, we have an important responsibility to ensure that people who undertake training and then become certified are comprehensively equipped to carry out their responsibilities to the highest standard and that the certification program operates with integrity and transparency. This task is not made easier when regulatory jurisdictions do not adhere to the various commitments from the NWI agreement that resulted in the development of a National Framework for Non-urban Water Metering that was agreed by COAG and industry in 2009.

As the certifying body we take a careful non-partisan approach to metering regulations but submit to the inquiry that states and territories have fallen short of the expectations and objectives on the National Water Initiative with respect to the area of metering and measurement.

We seek a recommendation from the inquiry to return to the intended objective of the NWI and have a national standard to apply in all states & territories on water metering and measurement. This point was clearly made in the 2017 Commission of Inquiry (page 290/291) as follows:

> However, the assessment of progress against the NWI (and related documents) has highlighted areas for improvement specifically relating to implementation of national frameworks for non-urban water metering, and compliance and enforcement systems for water resource management.

We draw the Commissions attention to the ACCC Interim Report into the Murray Darling Basin Water Markets Inquiry released on July 30, 2020, where the report noted on page *468 "Without adequate and consistent metering across the Basin, it is not possible to maintain an effective compliance and enforcement regime"*

The report further noted: *Stakeholders are concerned about differences in metering policies across the Basin and there have been calls for consistent metering requirements across jurisdictions. Swan Hill Council argued for: Compliance, metering and regulation to be uniformly implemented throughout the Murray Darling Basin*

Irrigation Australia supports these recommendations and notes that had the NWI and the National Framework been implemented in accordance with the undertakings provided, then a national metering standard would have been achieved.

The lack of a national standard has resulted in arrangements that are confusing for Certified Meter Installers and Validators, water users/irrigators and the irrigation industry in general.

Our submission follows.

Yours sincerely

Bryan Ward

Chief Executive Officer

Unit 11/58 Metroplex Avenue, Murarrie, QLD 4172
Irrigation Australia Limited (ACN 002 567 633)
PO Box 13, Cannon Hill, QLD 4170
T: (07) 3517 4000
M: 0437 557 808
W: www.irrigationaustralia.com.au
E: bryan.ward@irrigation.org.au
F: (07) 3517 4010

Irrigation Australia Submission to the National Water Reform Inquiry

***NWI paragraph 80 states**: "The Parties agree that the outcome of water resource accounting is to ensure that adequate measurement, monitoring and reporting systems are in place in all jurisdictions, to support public and investor confidence in the amount of water being traded, extracted for consumptive use, and recovered and managed for environmental and other public benefit outcomes".*

Irrigation Australia contends that despite the extensive cost and time committed to this section of the NWI, adherence to the outcome by states and territories has been poor. The signatories to the NWI have not met the expectations of this agreement and the subsequent inquiry with respect to *"ensuring that adequate measurement, monitoring and reporting systems are in place in all jurisdictions"*

In addition to the Productivity Commission review of the NWI in 2017, in the same year Australian and State Governments initiated a number of reviews on compliance and enforcement within the Murray-Darling Basin (MDB). Two of these reviews — one by Ken Matthews AO (mainly pertaining to New South Wales) and the other by the Murray-Darling Basin Authority (MDBA) (covering the entire MDB) — have recommended that jurisdictions adopt more comprehensive metering and non-metered measurement of water takes to encourage greater compliance and public confidence in accounting and compliance processes.

In the 2017 Commission of Inquiry findings the Commissioners noted (page 292):

> *Moreover, to the extent there are concerns that the original timeframes and/or approach to implementing the Non-Urban Metering Framework are no longer consistent with a risk-based principle, it is important that the Australian, State and Territory Governments agree on a way forward with the Framework that maximises the net benefits of rolling out new meters and clearly communicates this to affected water users.*
>
> It is therefore disappointing to note that despite the above inquiries and reviews of metering policy since 2017 only NSW thus far, has adopted comprehensive metering and measurement policy.

NWI section 87, 88 & 89 (Metering & Measuring) states:

***Section 87** - The parties agree that generally metering should be undertaken on a consistent basis in the following circumstances:*

1) *For categories of entitlements identified in a water planning process as requiring metering;*
2) *Where water access entitlements are traded;*
3) *In an area where there are disputes over the sharing of available water;*
4) *Where new entitlements are issued; or*
5) *Where there is a community demand.*

Section 88 *- Recognising that information available from metering needs to be practical, credible and reliable, the parties agree to develop by 2006 and apply by 2007:*

1) *A national meter specification*
2) *National meter standards specifying the installation of meters in conjunction with the meter specification; and*
3) *National standards for ancillary data collection systems associated with meters*

Section 89 - Reporting *– The parties agree to develop by mid 2005 and apply national guidelines by 2007 covering the application, scale, detail and frequency for open reporting addressing:*

1) *Metered water use and associated compliance and enforcement actions;*
2) *Trade outcomes;*
3) *Environmental water releases and management actions; and*
4) *Availability of water access entitlements against the rules for availability and use.*

Irrigation Australia provides the following comments on compliance with these sections of the NWI as follows:

Section 87 - Generally metering should be undertaken on a consistent basis

- Metering has actually moved further away from a consistent national standard than was in place before the NWI (see Table 3) and metering policies are now so disparate that meter manufacturers, resellers, installers and validators and importantly water users/irrigators (who usually meet the cost of metering policies) are understandably confused. Some examples of variability between jurisdictions are:
    - In QLD it is an offence to install your own meter, in NSW it is permitted provided the person is duly qualified.
    - In QLD pattern approved full flowing pipe meters are only required up to and including 400mm, in NSW pattern approved meters have no upper size limit.
    - In NSW, a meter must be installed by a Certified Meter Installer, in QLD, SA, WA, NT & ACT no requirement exists. In these states & territories untrained and unqualified persons are permitted to install meters.
    - In QLD there is no minimum pipe size for a meter to be installed, in NSW pipes under 100mm do not require meters (unless in an area of at-risk ground water)
    - In SA meters installed before 1 July 2019 do not require testing and validation, in other states revalidation of all meters is required every five years.

  Irrigation Australia is not drawing a conclusion on which of the above scenarios are preferred, rather we are drawing the Commissioners attention to the lack of consistency and non-compliance with the NWI and National Framework.

Sections 88 & 89 - The parties agree to develop by 2006 and apply by 2007 a national meter specification and standard specifying the installation of meters in conjunction with the meter specification

- Implementation of the NWI was overseen by the Natural Resource Management Ministerial Council (NRMMC). The NRMMC established the NWI Committee which, in turn, appointed a Metering Expert Group (MEG) in 2006.
- The MEG was comprised of representatives from state and territory water resources management agencies and water service providers - the Australian Government; National Measurement Institute; Irrigation Australia; Standards Australia; the Murray Darling Basin Authority and other industry representatives.
- The MEG has overseen the development of the standards for non-urban water meters by the National Measurement Institute and Standards Australia. These standards include:
    - NMI M10-1 The standard for meters intended for the metering of water in full flowing pipes (Pattern Approval); and
    - NMI M11-1 The standard for meters intended for the metering of water in open channels and partially filled pipes
    - AS4747 - the Australian Technical Standard for water meters
- Following an extensive seven-week public consultation process, a policy and national framework for non-urban water metering was eventually adopted in 2009 in accordance with sections 87, 88 & 89 of the NWI. The relevant points of the National Framework relating to these sections are:
    - implementation of national standards for meter construction, installation and maintenance;
    - use of certified installers, maintainers and validators;
    - requirements for compliance, auditing and reporting.

    The National Framework also specifies that:
    - all non-urban meters shall comply with the national metering standards by 1 July 2020, unless otherwise exempted by the relevant jurisdictional government department or agency;
    - any meter installed after 30 June 2010 must comply with the national metering standards;
    - any meter installed prior to 1 July 2010 shall be replaced with a compliant meter by 1 July 2020. Replacement shall be undertaken at the earliest opportunity, such as when major maintenance is required on the non-compliant meter.

In summary, Irrigation Australia submits that compliance with the NWI and the National Framework by Australian states & territories, except NSW, has been generally been poor in the following areas:

1) The National Framework has not been implemented on a national and consistent basis (see Table 3). Irrigation Australia submits that there is less consistency in 2020 than existed prior to the NWI.

2) Despite the principle agreed in the framework that states & territories will use certified installers, maintainers, and validators, not all states have complied with this (see Table 3). The use of untrained people to install non-urban water meters is extremely risky and unnecessary. There are currently more than 500 Certified Meter Installers and Validators in Australia who have all completed a three-day training course and have demonstrated competence in a total of six units of competency listed under the National Framework. The six units are:

Table 1

Competency	Description
NWPGEN003	Apply the environmental and licensing procedures of the water industry
NWPNET002	Prepare and restore worksite
NWPNET011	Locate, identify and protect utilities
NWPIRR014	Install meters for rural water supplies
NWPIRR022	Maintain meters for rural water supplies
AHCWHS301	Contribute to work health and safety processes

Certified Meter Installers and Validators operating in NSW also receive training in telemetry and data logging devices (known in NSW as Local Intelligence devices – LIDs).

It is not reasonable to expect an unqualified meter installer would be able to understand the various disturbances that determine up-stream and down-stream pipe lengths without appropriate training. The complexity of telemetry devices in some jurisdictions makes it obvious that the risk of incorrect installation is high. Irrigation Australia does not support the use of untrained people to install non-urban water meters.

In July 2020, a Natural Resources Access Regulator (NRAR) compliance campaign in the NSW Hawkesbury area found only around a quarter of farms were fully compliant with NSW water management laws. While 12 of the 43 properties were fully compliant with water laws, 26 received official cautions due to faulty meters. Non-compliance can be minimised by states requiring installation by qualified meter installers and validators as intended in the National Framework. Irrigation Australia considers it most unsatisfactory that still most states & territories allow untrained people to install meters.

3) Several states have not complied with the AS4747 standard as required by 1 July 2020; some states have simply exempted themselves. This backsliding has been for political

reasons and these decisions were certainly not made in the best interests of sound metering policy.

The Commission noted in its findings from the 2017 Inquiry (page 291) that: *'Implementation of the Non-Urban Metering Framework has been subject to delays (due to difficulties associated with having meters certified to the required standard) and progress in rolling out compliant metering is generally taking longer than the timelines set out in the Framework'.*

In 2017 this was a fair assessment of the situation. However, since this inquiry the number of AS4747 Pattern Approved meters has substantially increased and as of July 2020 the following pattern approved meters are available: (DN = nominal internal pipe diameter in millimetres)

Table 2

Model	DN
Siemens MAG800	DN50 - DN1200
Krohne Waterflux 3070	DN25 – DN600
Arad Octave	DN50 – DN 300
ABB AquaMaster3`	DN40 – DN200
Aquamonix i500	DN40 – DN600
Sensus WP-Dynamic	DN40 – DN400
Euromag MUT 2200 EL	DN40 – DN1000
Rubicon Sonaray	DN600
Arad WSTsb	DN50 – DN300
ABB AquaMaster4	DN40 – DN300
Krohne Optiflux 2300C	DN25 – DN1800
Siemens MAG5100W	DN50 – DN1200

As Table 2 indicates, there are competitive numbers of meters available in sizes up to 1200mm and thereafter limited choices exist, however, a number of meter manufacturers have meters undergoing testing and approval so we expect the range of pattern approved meters to continue to increase.

Some states & territories continue to claim that the reason they have not implemented the adoption of pattern approved meters is because of the lack of availability. This is particularly disappointing for the eight meter manufacturers who, on the strength of the commitments in the NWI and National Framework, have each spent significant sums of money obtaining AS4747 Pattern Approval only to find that jurisdictions are still allowing non-pattern approved meters, that have not been tested to the standard NMI M10.1, to be installed.

In QLD for example where pattern approved meters are not required over 401mm the MDBA report (Pattern Approved Metering Requirements for the Murray Darling Basin dated April 2020) indicates that approximately 1,950 meters (nearly 10% of all QLD meters) will escape the requirement to meet pattern approval standard AS4747 and have not been tested to the standard NMI M10.1.

There has also been some industry commentary that the lack of availability of large (over 1200mm) meters is an area of concern. This should be kept in context with data in the same MDBA report that indicates the total number of works to be metered in NSW over 1200mm requires only 18 meters.

4) Meters installed after 30 June 2010 in every state & territory did not comply with the national metering standard by 2020, however NSW introduced this requirement on 1 April 2019, South Australia on 1 November 2019 and Victoria in March 2020 (with exemptions). Other states are showing little intention to comply with this requirement some eleven years after the adoption of the framework.

5) No states have adopted the requirement to replace a meter installed before 2010 with a compliant pattern approved meter by 1 July 2020 however Victoria are requesting water corporations to prioritise the replacement of non-compliant meters by June 2025.

Many meters installed before 2010 will soon be reaching, or will have reached, the end of their useful life and validation of these meters should be mandatory.

Irrigation Australian details our assessment and compliance score in Table 3 below for each state and territory with 5 indicating full compliance and 0 indicating the least compliance:

Table 3

National Framework Requirements	NSW	QLD	VIC	SA	ACT	TAS	NT	WA
Implementation of the national standard for meter construction, installation and maintenance (AS4747)	5	2 (1)	3 (1)	5	4 (1)	4 (1)	2 (1)	2 (1)
Use of a Certified Installer and Validator for installation	5	0 (2)	3 (2)	0 (1)	0 (2)	2 (2)	0 (2)	0 (2)
Use of a Certified Installer and Validator for validation	5	5	5	3 (2)	0 (3)	4 (3)	0 (3)	0 (3)
Any meter installed after 30 June 2010 must comply with the national metering standards as at July 2020	3 (1)	0 (3)	2 (3)	2 (3)	3 (4)	0 (4)	0 (4)	0 (4)
Any meter installed prior to 1 July 2010 shall be replaced with a compliant meter by 1 July 2020	0 (2)	0 (4)	2 (2)	0 (4)	0 (5)	0 (5)	0	0 (5)
Total score from 25	**18**	**7**	**15**	**12**	**7**	**10**	**2**	**2**
Percentage compliant	**72%**	**28%**	**60%**	**48%**	**28%**	**40%**	**8%**	**8%**

Notes:

NSW:

1. No requirement existed until 1 April 2019
2. No requirement

QLD:

1. Only applies up to 400mm diameter despite a good range of pattern approved meters being available up to 1000mm
2. Not required
3. Not required
4. Not required

VIC:

1. Regulated but have until 2025 and exemptions apply
2. Only applies to pattern approved meters and exemptions exist
3. Have until June 2025 to comply
4. Have until June 2025 to comply

SA:

1. Not required
2. Validation not required for meters installed before 1 July 2019
3. Only required for meters installed after November 2019
4. No requirement

ACT: 1. Required but no evidence of enforcement 2. Not required 3. Not required 4. Required since 1 July 2015 5. No requirement	**TAS:** 1. We are not aware on any compliance enforcement to ensure this is occurring 2. Recommended only 3. No evidence of compliance enforcement 4. Required since 10 February 2014 5. No requirement
NT: 1. Requested from 1 July 2017 but not required until 1 July 2027 2. No requirement 3. No requirement 4. NT have moved this to 2027 and only for meters installed after 1 July 2017	**WA:** 1. Pattern Approved meters are encouraged but not enforced 2. No requirement 3. No requirement 4. No requirement 5. No requirement

It is apparent from the above table that many states & territories have not complied with their previous undertakings and responsibilities to the NWI and National Framework for non-urban water metering. This lack of compliance has led to a very inconsistent outcome for metering across states and territories which has resulted in confusion and unnecessary complications for certified meter installers and validators, water users and irrigators.

The prevalent continued use of non-pattern approved meters in several states results in uncertain measurement outcomes, a point made in the Final Regulatory Statement in June 2009 (page 3) when they quoted from a study of non-pattern approved meters by Coleambally Irrigation Corporation Ltd (Naylor & Smith, 2007) where recording errors were found to be ranging from +20% to -30%.

In another report released by Goulburn-Murray Water (G-MW) (Hydro Environmental, 2008) it was recorded that the large Dethridge Wheels operated with accuracies between -18% to +3% across G-MW's six irrigation areas during the 2007/08 season. It is surprising therefore to note, that some eleven years later in the Victorian Non-urban Water Metering Policy released in March 2020 they state that in their estimate *"there are around 3000 Dethridge wheels remaining in districts across Victoria*".

Irrigation Australia notes that aside from NSW very little progress in the past eleven years has been made in advancing the objectives of the NWI in accordance with the NWI and National Framework to achieve consistent metering and measurement policy.

In conclusion Irrigation Australia reaffirms its support for a fully functional and compliant NWI and would strongly support a Productivity Commission recommendation arising from this inquiry to implement a national policy for non-urban water metering and measurement.

References

- NWI (Intergovernmental Agreement on a National Water Initiative)
- National Framework for Non-Urban Water Metering (2009)
- MDBA List of pattern Approved meters - https://www.irrigationaustralia.com.au/documents/item/1069
- MDBA Pattern Approved Metering Requirements for Murray Darling Basin States - https://www.irrigationaustralia.com.au/documents/item/1107
- Victorian Non-Urban Water Metering Policy (March 2020) - https://www.irrigationaustralia.com.au/documents/item/1106
- ACT Water Meter Installation, Maintenance and Replacement Guide (March 2015) - https://www.accesscanberra.act.gov.au/ci/fattach/get/98174/1471386692/redirect/1/session/L2F2LzEvdGltZS8xNTc0NzI0MzcwL2dlbi8xNTc0NzI0MzcwL3NpZC9mVXJhMXhGSWxYJTdFd3puT3A3QkhRJTdFTE5MT0prejJLT2l6Wm45YVhvUWlZYzFiRzkyM3FvdUtBcTdiTTdrTHduU2V0ZjlWT29sSHVyT2xHNHNMUm8lN0VKUURCdEhLdDNPbmdreUFkb0hxMDNma09qJTdFWjJQMEc0TW9kZyUyMSUyMQ==/filename/Water+meter+installation%2C+maintenance+and+replacement+guide.pdf
- Government of Western Australia – Guidelines for water meter installation - https://www.water.wa.gov.au/licensing/metering-and-measurement/meter-installation
- NT Water Resources – Non-urban Water Metering Code of Practice for Water Extraction Licences - https://denr.nt.gov.au/__data/assets/pdf_file/0010/438580/factsheet-non-urban-water-metering-code-of-practice.pdf
- South Australian Licensed Water Use Metering Specification - https://www.environment.sa.gov.au/topics/water/water-licences-and-permits/metering-water-use
- Queensland Interim Water Meter Standard for Non-urban Metering - https://www.irrigationaustralia.com.au/documents/item/959
- Tasmanian Standard for Non-urban Water Meters - https://www.irrigationaustralia.com.au/documents/item/971
- NSW Non-urban Water Metering Policy - https://www.irrigationaustralia.com.au/documents/item/1122