



Australian Government



Pattern approved metering requirements for the Murray–Darling Basin states

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Acknowledgement of the Traditional Owners of the Murray–Darling Basin

The Murray–Darling Basin Authority pays respect to the Traditional Owners and their Nations of the Murray–Darling Basin. We acknowledge their deep cultural, social, environmental, spiritual and economic connection to their lands and waters.

The guidance and support received from the Murray Lower Darling Rivers Indigenous Nations, the Northern Basin Aboriginal Nations and our many Traditional Owner friends and colleagues is very much valued and appreciated.

Aboriginal people should be aware that this publication may contain images, names or quotations of deceased persons.

Version control		
Version	Revision date	Author/modifier
v1	April 2020	MDBA

Purpose

In June 2018 the Australian Government and the Murray–Darling Basin states agreed to the [Murray–Darling Basin Compliance Compact](#) which sets out actions they will take to strengthen compliance with water management rules in the Basin. The availability and use of water meters that meet the requirements of the relevant Australian Standard is particularly important if the community is to have confidence in water compliance arrangements.

Part three of the Compliance Compact describes actions related to Metering and Measurement, which include the commitment to publish metering policies and implementation plans addressing meter accuracy, coverage, transmission of data, and a timetable for installation, auditing and maintenance of the meter fleet. It also includes a commitment to report annually on progress with their implementation plans.

This report is published in support of the requirement of 3.8 of the Compliance Compact:

3.8 The Australian Government and Basin States will work with each other, jurisdictions, testing laboratories, meter manufacturers and industry to set a timetable for delivering a comprehensive range of pattern approved meters.

There is a range of pattern approved meters currently available in Australia with new pattern approved meters regularly added to the range.

What is a pattern approved meter?

The National Measurement Institute of Australia checks non-urban water meters for compliance with the Australian Standard for Non-Urban water meters (AS4747). If the meter passes testing, it is pattern approved as compliant with the requirements for closed conduit meters (NMI-M10); or with the requirements for open channel meters (NMI-M11); or with the requirements of equivalent overseas standards.

Value of the information

The following tables indicate the scale of metering requirements from information provided by New South Wales, Victoria, Queensland and South Australia. This information helps to describe the expanding market for Pattern Approved meters across the Murray–Darling Basin.

For further information about the non-urban water meter requirements please contact the appropriate state agency.

NEW SOUTH WALES

Agency: [New South Wales Department of Industry](#)

The estimated number and infrastructure sizes of works requiring pattern approved meters under the new NSW metering framework for surface water and groundwater are in the following tables. These figures are indicative, based on best available data.

Number of works requiring a meter in Stage 1

Stage 1 – Largest Users		
Meter size (mm)	Currently metered	Works to be metered under new requirements
500–549	118	182
550–599	2	5
600–649	408	538
650–699	248	349
700–749	6	10
750–899	43	73
900–999	31	50
1000–1,200	22	32
>1,200	9	18
TOTAL	887	1257

Number of surface water works in each region that will need to be metered in Stages 2–4

Meter size (mm)	Stage 2 – Northern inland		Stage 3—Southern inland		Stage 4—Coast	
	Currently metered	Works to be metered under new requirements	Currently metered	Works to be metered under new requirements	Currently metered	Works to be metered under new requirements
0–49	6	9	19	33	13	42
50–99	58	156	151	255	155	572
100–149	271	1,147	530	1,306	693	2,280
150–199	149	434	396	718	106	295
200–249	81	162	299	513	32	79
250–299	48	107	306	519	9	23
300–349	70	153	456	727	15	30
350–399	53	86	213	322	0	9
400–449	153	246	180	257	0	5
450–499	19	48	55	73	1	3
TOTAL	908	2,548	2,605	4,723	1,024	3,338

Stage 1 includes only pumps of 500 mm or larger.

For stages 2–4, multiple works on a single licence, work approval or landholding that meet the metering thresholds are included.

Number of groundwater works in each region that will need to be metered in Stages 2–4

Meter size (mm)	Stage 2 – Northern inland		Stage 3—Southern inland		Stage 4—Coast	
	Currently metered	Works to be metered under new requirements	Currently metered	Works to be metered under new requirements	Currently metered	Works to be metered under new requirements
<50	20	57	106	275	1	360
50–99	1	7	13	28	0	1
100–199	137	826	161	536	18	53
200–299	441	1,391	336	673	13	785
300–399	424	982	369	564	4	123
400–499	210	404	189	252	3	31
500–599	150	239	68	104	0	4
600–699	23	53	47	72	0	8
700–799	4	28	14	24	0	6
800–899	5	8	7	15	0	0
900–999	16	88	8	23	1	22
1,000–1,199	40	151	1	8	0	71
>=1,200	202	651	7	32	16	934
Excavations	24	168	13	49	0	259
TOTAL	1,697	5,053	1,339	2,655	56	2,663

Works smaller than 50 mm include spear points, which will require a meter under the new framework. Many of the works that are larger than 1,200 mm are wells.

The size of groundwater works is based on the outside diameter specified on the drilling certificate (Form A). While the requirement to have a meter is based on the authorised work, the meter installed may be smaller, depending on other aspects of the infrastructure (e.g. pipe or pump size).

VICTORIA

Agency: [Victorian Department of Environment, Land, Water and Planning](#)

Victoria has comprehensive non-urban water metering. Victoria's rural water corporations manage around 47,000 meters. The following table is based on best available data provided in good faith by these water corporations.

Number of non-urban water meters in Victoria

Meter type/ size	Unregulated system	Regulated system
Open Channel > 5000 ML/Yr.	0	1
Closed Conduit > 5000 ML/Yr.	7	37
Open Channel	0	2,611
Closed Conduit	3,842	35,967
Ground Water	4,454	2
Total	8,303	38,618

QUEENSLAND

Agency: [Queensland Department of Natural Resources, Mines and Energy](#)

The Queensland Murray–Darling Basin is a priority, however the development of a new water metering policy is being considered in the context of Queensland’s state-wide needs.

Meter fleet – Queensland state-wide requirements (approx.)

Queensland has around 5,000 non-urban meters in-service. Of these, around 1,400 meters are in the Queensland part of the Murray–Darling Basin. Around 15 000 new and replacement pattern approved meters will be required for Queensland over the next 10 years.

Meter size (mm)	Current number of meters	Potential new meters
<100	2,500	6,000
101-200	2,000	5,400
201-300	150	1,000
301-450	100	900
451-600	100	700
>601, and including channel meters	150	1,000
TOTAL	5,000	15,000

SOUTH AUSTRALIA

Agency: [South Australian Department for Environment and Water](#)


The South Australian Implementation Plan for meters anticipates a gradual implementation of new pattern approved non-urban water meters. Except where they fail beforehand, meters installed across South Australia will be replaced with AS4747 compliant meters after 30 June 2019 as they progressively come to the end of their operational life.


The following metering requirements table contains information prepared in 2008. The *Meters to be installed* row of the table refers to meters in the Eastern and Western Mount Lofty Ranges which were installed between 2012 and 2014. Considering an average meter life of 15 years, it is likely that South Australian's entire meter fleet (over 13,700 meters) will be refreshed with AS4747 compliant meters by 2034.


Meter size (mm)	Ground water	Surface water (Murray)	Meters to be installed	Meters within irrigation districts	Max flow rate (KL/h)	Max flow rate (ML/d)
<50	471	68	595	4552	<16	<0.4
50-100	3285	485	7230	477	25-100	0.6-2.4
101-200	2160	671	270	2488	150-400	3.7-9.5
201-375	408	207	0	3	500-1400	12-33
376-499	4	21	0	1	1600-2000	38-50
>=500	0	16	0	0	>2500	>60
Unknown sizes	75	0	5	780	N/A	N/A
TOTAL	6403	1468	8100	8301		

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