Submission to the Independent Pricing and Regulatory Tribunal

Response to the IPART Draft Determination on Rural Bulk Water and WAMC Pricing – Metering Reform

16 April 2021

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1. Introduction

WaterNSW is pleased to provide a response to IPART's draft determination (the **"draft report"**) on the review of Rural Bulk Water and WAMC prices for the 2021 Determination period published on 16 March 2021.

This submission responds to issues raised in the draft report regarding the proposed costs and approach to delivery of the NSW Government's program of non-urban metering reform (the "**Metering Reform Program**").

1.1 Summary of approach

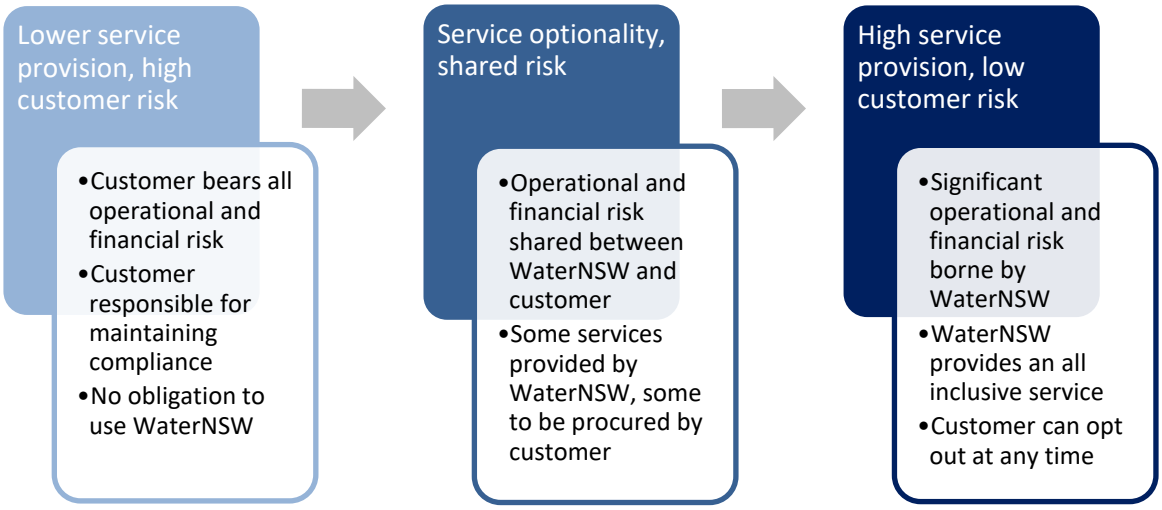
WaterNSW continues to support the response to IPART's request for information on the cost of non-urban metering reform that was submitted to IPART on 30 November 2020 (our "**Metering Reform Response**"). This submission does not seek to repeat the contents of our Metering Reform Response and we have only sought to address the issues raised by IPART and its consultants in the draft report or provide additional information and data that we believe will be useful to stakeholders and IPART in assessing the efficiency of Metering Reform Program costs.

We acknowledge IPART's concern about the efficiency of our cost estimates which we have prepared in good faith in the short time available to us, noting that policy requirements were only finalised in August 2020. Since our Metering Reform Response, we have continued firming up these efficient cost estimates by:

- Benchmarking our costs with similar meter rollouts;
- Researching and contacting equipment and service suppliers to obtain market quotes;
- Modelling different roll-out and customer adoption scenarios to settle on a most likely outcome base case; and
- Establishing a comprehensive risk register that is aligned to our work program and financial assumptions.

We have centered our proposed approach on our customers. For privately-owned meters, we will provide a range of services to assist customers to become and remain compliant. For customers of government-owned meters, we are proposing to provide an all-inclusive service where WaterNSW will be responsible for, and bear the cost of, these meters becoming and remaining compliant.

Figure 1: Service options



The key issues we have addressed in our submission are summarised below and expanded on in the remainder of this response:

Table 1 : Summary of WaterNSW submission response and customer outcomes

Program element	Issue	Proposed approach	Customer outcome	Page
Meter rollout	Deliverability	A comprehensive register of risks aligned with the work program and financial assumptions has been developed. The process of delivery and delivery risk will also be actively managed through WaterNSW's implementation plan.	Ensure that WaterNSW will meet its obligations under its operating licence and that customer meters are compliant.	8
Privately-owned meters	Efficient scheme costs	WaterNSW has undertaken extensive sensitivity analysis to assess alternative assumptions and how these might impact on costs.	Increased certainty of efficient cost outcomes for customers.	12
Privately-owned meters	Cost recovery	Fee for service based on efficient cost estimates.	Customers will have a choice to procure services from WaterNSW to establish and maintain compliant meters. Fees based on efficient costs.	19
Government-owned meters	Telemetry charges	These are included in the metering service charge (MSC). IPART's draft report incorrectly concluded that telemetry would be an additional	Simple charging system, with MSC to include a range of services necessary to establish and maintain compliant meters.	22

		charge on top of the MSC[1].		
Government-owned meters	Cost recovery	Justification and firming of efficient cost estimates are provided within this response. Considered IPART's impactor pays methodology.	Impactor pays principles for the recovery of efficient costs for government-owned meters, ensuring customers face the costs of the services they receive through an allocation of costs that is practical and transparent. Fees based on efficient costs.	25
Bill impacts	Affordability	Modelled bill impacts for different customer groups.	Proposal strikes a balance between bill impacts and assisting customers to become, and remain compliant in an affordable way. Charges have been structured to mitigate the cost of transition for customers and to positively impact water user engagement and buy-in to the program's objectives. WaterNSW has sought to avoid significant upfront fees and price volatility for our customers by recovering transitional costs as part of the MSC and over the 2021 Determination period.	28
Customer engagement	Stakeholder consultation	Consideration of feedback received to-date and ongoing customer engagement and inclusion of this feedback where appropriate into our approach and planning.	WaterNSW will provide a range of services to assist customers to become and remain compliant for privately-owned meters. WaterNSW is proposing to provide an inclusive service essentially bearing all material risk for government-owned meters to become and remain compliant. Customers will retain a choice in terms of what level of service and risk protection they want to procure from WaterNSW.	31
Risk allocation	Managing customers' ability to become and remain compliant	Consideration of who is best placed to manage risk.	WaterNSW will provide a service option where it bears the risks and costs involved in ensuring that customer meters remain compliant. While there are options allowing customers to procure these somewhere else, it is likely that WaterNSW will ultimately bear a material proportion of this risk.	33

Source: WaterNSW analysis

1.2 Implementation of Government policy

The NSW Government has established a metering framework which includes the 38-page *Non-Urban Water Metering Policy* document that was updated in November 2020 along with associated regulation and legislation. It is understood that the NSW Government considered the cost and benefits of this policy as part of the policy-making process. In its draft decision, IPART

[1] IPART, Review of WaterNSW's Rural Bulk Water Prices, Draft Report, March 2021, p. 168.

referred to the reforms as 'comprehensive' and acknowledged the benefits of improved compliance and monitoring, noting that the reforms will significantly improve the monitoring and compliance of bulk water usage and water resource management in NSW.[2]

The NSW Government has also publicly confirmed that the policy framework has been informed by consultation, economic analysis and technical expertise. WaterNSW will be responsible to make government-owned meters compliant. For privately-owned meters, and customers that do not currently have a meter, the responsibility of making meters compliant and/or obtaining a meter resides with the customers, who are also responsible for ongoing maintenance.

The NSW Government has stated that its overarching objective for the new requirements is to improve the standard and coverage of non-urban water meters across NSW. In addition to developing the underlying policy, the NSW Government also mandated a staged implementation roll-out over several years based on pump size or the area in NSW in which the licensee is located. The policy applies to government-owned and privately-owned meters and WaterNSW has been tasked with implementing the policy:

- For government-owned meters, WaterNSW must assume additional responsibilities, including compliance with the new standards under the non-urban metering rules. WaterNSW expects that approximately 2,800 government-owned meters will need to be made compliant; and

- For privately-owned meters, it is the customer's responsibility to ensure that they have a meter and that the meter is compliant. There are approximately 5,200 existing privately-owned meters and 15,500 privately-owned meters that will need to be installed or replaced.

In the short time available, WaterNSW has comprehensively considered how this new policy can be implemented, what the risks for customers and WaterNSW are, and who is best placed to bear those risks. We have concluded that WaterNSW is best placed to offer services relating to the implementation and ongoing compliance with the new policy and we are proposing services that we believe provide the best outcomes for our customers at prices that reflect efficient costs.

At the same time, we are also giving individual customers the opportunity to engage with us directly. This will allow us to consider individual circumstances and offer choices to our customers in terms of how much or how little assistance they need from us to become and remain compliant.

This proposed balance of efficient costs, service delivery and risk to achieve the NSW Government's policy objectives and effective customer outcomes is reflected in the approach and costs outlined in our Metering Reform Response, adjusted for the factors identified in this submission resulting from discussion with IPART and further analysis.

If IPART decides to support an alternative option to that proposed, we note that significant risk could be transferred to customers in satisfying the obligation for the meter to remain compliant. While we agree that some customers may want this flexibility, we are concerned that applying it to all customers could result in some meters becoming non-compliant in circumstances where customers are unaware or unable to fulfill their obligations. This would likely result in the overall policy outcomes being less efficient for customers, resulting in a higher overall cost of compliance

[2] IPART, Review of WaterNSW's Rural Bulk Water Prices, Draft Report, March 2021, p. 164.

2. Works program to meet new meter reform requirements

The issue

New or replacement meters are to be installed in a staged manner over a proposed five-year period between FY21 and FY25.

The Metering Reform Program comprises an estimated 20,650 privately-owned customer meters and 2,800 government-owned meters requiring an upgrade. There are also pathways for water users to retain their existing meter provided it is validated and confirmed as accurate. WaterNSW expects an estimated 5,200 existing privately-owned meters may currently not meet the policy requirements over the period of program implementation and will need to be made compliant.

Different rollout dates apply to water users depending on their pump size or thier location. The rollout begins with surface water pumps 500mm and above, followed by three major geographical regions in December 2021,2022 and 2023.

IPART's preliminary position

IPART has expressed concern as to whether WaterNSW will be able to deliver its proposed implementation program. IPART considers that an effective implementation program should appropriately consider and balance the costs, benefits and risks associated with the program.

IPART has also expressed a concern that WaterNSW has not assessed the risks and opportunities for the proposed implementation program. IPART's consultant Cardno considered that a robust implementation program should have good practice risk management. That is, to develop a comprehensive register, conduct regular reviews and identify how these risks can be mitigated. This will ensure business processes are delivering efficient outcomes.[3]

WaterNSW response

As noted by IPART, the NSW Government has implemented comprehensive metering reforms and has enacted legislation and regulations to implement this program in NSW and stage its rollout. WaterNSW has proposed an approach to the timely and effective delivery of the policy's objective, underpinned by efficient costs, as demonstrated by the information and data presented within this submission.

We note that the metering rollout timeframe and delivery program is comparable to what has been achieved in other Australian jurisdictions. The Western Australian Department of Water commenced an installation program of ~14,000 meters over four years in 2013, prioritising the largest allocations.[4] A similar rollout of non-urban metering in regional Victoria also took a region-by-region approach to installation over a four-year period.[5]

Specific concerns raised by Cardno highlight the progress made to date as part of the Stage 1 rollout (surface pumps 500mm and above). However, this does not take account of the unprecedented circumstances regarding the summer bushfire events and the global COVID-19 pandemic and their impact on meeting 2020 targets. The potential for ongoing and future delivery risks are being actively managed through WaterNSW's implementation program and risk register.

[3] IPART, Review of WaterNSW's Rural Bulk Water Prices, Draft Report, March 2021, p. 172
[4] Government of Western Australia Department of Water, Water Resources Management Reform Regulatory Impact Statement, March 2013
[5] Victoria State Government DELWP services, Victorian Non-Urban Water Metering Policy, March 2020

Proposed approach

In response to Cardno's concerns regarding robust risk management, WaterNSW has provided within this submission a copy of a comprehensive risk register that assesses the risks and opportunities associated with the implementation program and aligns these risks to its work program and financial assumptions. The development of this risk register is part of the WaterNSW Risk Management Framework and aligned to AS/NZS ISO 31000:2009 Risk management, which assesses the risks and opportunities with its implementation program and identifies any mitigation measures required. This risk register is provided in **Appendix B**.

Other than being impacted by external events outside our control, WaterNSW is confident that it will be able to achieve and deliver the Metering Reform Program to the standard and requirements set out in the metering framework within the 2021 Determination period and that the expected benefits will be realised. In particular, our risk register and implemenmtion planning provides us with the tools to actively mitigate risks relating to:

- Meeting the objectives of its operating licence in relation to non-urban metering obligations; and
- Delivering the reform objective by making non-urban meters compliant in accordance with standards and requirements, thereby improving compliance, enabling the monitoring of water use, and supporting water use management.

WaterNSW has undertaken significant work on its risk register and implementation planning to allow it to minimise the risks of:

- Not being able to deliver the intentions of the reforms; and
- Failing to meet the objectives of its operating licence.

Table 2 summarises the main risks WaterNSW identified, the relevant controls and the residual risks. Our risk register has fed significantly into our assessment of the efficient cost of delivering the government's reform program.

Table 2: Risk register summary

Delivering the intentions of the reforms	Meeting the objectives of the operating licence*	Risks around the scenarios	Controls	Residual risk
Rollout schedule delayed		Compliance activity is delayed providing a bottleneck for resourcing that WaterNSW cannot cope with. WaterNSW may not be able to determine which work approvals have or have not been made compliant impacting the ability to apply the new charges and determining which charge applies	Partner with DPIE, NRAR pathway to cater for customers who are not compliant on time. Increase education and communication mediums to reach more customers with the compliance message	Medium
Erroneous key meter master data	Erroneous key meter master data	Customer and meter data is incorrect from inception making it difficult for agencies and customers to undertake their function effectively,	Field service team to undertake verification and validation of water take. Provide feedback to Irrigation Australia and Duly Qualified Person ("**DQP**")	Medium

		affecting the impact of the reforms	directly regarding these errors. Works with DPIE and NRAR on options for penalties and their appropriateness, for submitting incorrect data. Extensive communication campaigns.	
-	Data acquisition services not compatible	Data is not captured accurately by the DAS and water accounting is impacted. This will impact customers who will not have an accurate water balance and may go into a negative balance, WaterNSW who may issue incorrect bills, NRAR who may invoke incorrect compliance proceeding and DPIE who will have inaccurate data for water resource planning.	Training of DQPs to ensure they enter correct data. End to end review of LID ordering process. Analytics so as to provide statistical monitoring of data outcomes and aligned with expected usage threasholds.	High
-	Corporate systems don't integrate with data acquisition service	Data is not captured or stored accurately or timely impacting all stakeholders.	Accelerated testing program.	Medium
Customer dissatisfaction or lack of buy-in	-	Increased demand for WaterNSW services from customer enquiries across the entire meter reform spectrum. WaterNSW's inability to service these request may lead to ongoing frustration, complaints and reputation damage.	Work with DPIE to deliver more frequent and widespread communication and education plans to level out this potential demand. Efficient work and educating customers to self serve through the WaterNSW water accounting system (**IWAS**) and accessing info on our website. Also freeing up staff time by introducing IT solutions wherever possible. Develop online fact sheets and links to DPIE website to assist water users understand their obligations via self serve.	Medium
-	Customer non-compliance	Increased demand on WaterNSW staff to assist with in field compliance, monitoring and validation which may increase safety risks. Allocation of resources to assist with manual data entry and	Extensive communication campaigns.	Medium

		customer notifications of non-compliance.		
-	Inability to deliver on BAU activities	WaterNSW staff may have to provide significant support to customers through their compliance journey that has not be provisioned for and this may impact our ability to perform our operating licence obligations.	Working with customers to educate them on how they can self-serve – i.e. use I**WAS**, to determine the daily release of water from dams and storages for all customers downstream).	Medium
-	Performance failures by 3rd party service providers	Data not captured correctly in LID.	Spreading the risk across five makes of LID.	Medium
	Unclear Telemetry opt in and opt our rules	Customers will be able to opt in and opt out of telemetry as they wish which will impact WaterNSW ability to manage the downloading of the LID data. This will impact all components of the LID download program and has the potential to increase costs significantly and impact WaterNSW's ability to download the data at least annually for the cost allocated.	Develop clear rules for opting in and out for customers with DPIE to ensure the least impact to all stakeholders.	Medium

Source: WaterNSW analysis
Notes: An extract of the risk register can be found in **Appendix B.**
* The objectives of WaterNSW's 2017-22 operating licence are to a) provide transparent, auditable terms and conditions for WaterNSW to lawfully undertake its activities to industry good practice; b) recognise the interests of stakeholders within its Area of Operations; and c) impose the minimum regulatory burden on WaterNSW by avoiding duplication or conflict with other regulatory instruments.

A summary of relevant legislative considerations relating to the setting of metering charges is provided in **Appendix F**.

3. Metering scheme management

3.1 Efficient costs

The issue

A significant step change in the volume of activities required to be undertaken by WaterNSW is expected relative to current levels, across the three core processes of metering compliance, recording and reporting and general enquiries.

WaterNSW developed and proposed a bottom-up approach to derive the preliminary cost estimates. We proposed:

- $35.8 million in operating expenditure for both project establishment and ongoing management. The main drivers are labour costs (e.g. WaterNSW staff undertaking field work to download LIDs) and IT licensing fees (e.g. DAS and DQP portal); and

- $2.9 million in capital expenditure for motor vehicles to carry out field work and corporate systems to manage meter data.

When assessing efficient costs we ask that IPART consider costs WaterNSW has incurred in this regulatory period for preliminary set up efforts to support the policy implementation (of which the first tranche was due December 2020 and hence these costs could not be deferred). WaterNSW has not received an allowance for these costs that included:

- Initial procurement, planning and field inspections;
- Provisions of customer communication, training and consultation;
- Responding to customer and DQP enquiries;
- Engaging with the regulator to ensure we have interpreted the policy requirements correctly;
- Appointing staff to manage the implementation of the reform; and
- IT capex and support costs to facilitate DQP Portal DAS and LID requirements.

IPART's preliminary position

IPART has expressed concern that preliminary cost estimates were not developed with sufficient rigour to demonstrate efficiency. Specifically, IPART and Cardno queried a number of the key assumptions underpinning the cost estimates and requested that WaterNSW perform sensitivity testing of its assumptions against the proposed expenditure.

WaterNSW response

The costs and prices submitted to IPART in our Metering Reform Response in November 2020 continue to reflect WaterNSW's forecasts, using the regional rollout data supplied by the NSW Department of Planning, Industry and Environment ("**DPIE**"). WaterNSW's submission was designed to meet not only its obligations, but to provide a platform for water users to meet their initial and ongoing compliance.

In response to the concerns raised by IPART, WaterNSW has rigorously tested and challenged our bottom-up preliminary cost estimates. This has included the validation of costs and key assumptions through benchmarking where practical (for example, against external data points from metering rollout schemes in other jurisdications) and extensive sensitivity analysis across a number of key variables to present a **10% and 20% reduction on the base case cost assumption**. WaterNSW has not included sensitivities that present an increase on the base case assumptions on the basis that we have the potential to unlock and deliver efficiency savings and therefore not expose customers to downside risk.

Appendix A contains a full list of the key issues and assumptions raised by IPART and Cardno in the draft report and, for each issue and assumption, the response by WaterNSW.

For the purposes of this submission, our preferred position has been refined to reflect the impact of the following feedback from Cardno:

- Removal of the 2.5% per annum salary escalation (noting that IPART's model is stated in constant dollar 'real' terms) for all staff. This assumption is broadly consistent with our Metering Reform Response, noting IPART's approach to setting tariffs in real dollars (i.e. excluding inflation).The approved CPI increase for the previous 4 years has been:
    - 17/18 - 2.1%;
    - 18/19 - 1.9%;
    - 19/20 - 1.3%; and
    - 20/21 - 2.2%.

  The outcome of this change is to reduce the previous opex allowance request by approximately $1.9 million.

- Total available working weeks per annum has been adjusted from 40.04 to 40.66 based on feedback regarding staff utilisation.The revised calculation for this assumption is:
    - 52 weeks per annum;
    - 5 weeks annual Leave (regional employees);
    - 2 weeks public holidays; and
    - 2.2 weeks non annual leave (e.g sick leave).

  This equates to 42.8 weeks. A 95% utilisation ('at work' allows for mandatory training, team/management meetings, staff development and performamce reviews, safety training and safety assessments, vehicle maintenance and other training (e.g. training on process changes arising from the WAVE program)) has been applied to derive the 40.66 total working weeks per annum. These costs are fully-loaded, including salary, on-costs, vehicle and other costs. WaterNSW bears the risk that actual utilisation differs from forecast utilisation of 95%.

  For the reasons cited above, WaterNSW considers the proposed utilisation as unachievable and unsupported by any industry benchmark.

  The outcome of this change is to reduce the previous opex allowance request by approximately $0.4 million.

- The 'other' salary costs for each Field Officer and Team Leader has been adjusted from $25,000 per annum to $15,000 per annum.This is based on the current forecast costs for a customer field officer.

  The outcome of this change is to reduce the previous opex allowance request by approximately $1.0 million.

- The upload time for initial site inspection over the reform rollout has been decreased. WaterNSW included a provision for a customer field officer to manually upload data once a site has been visited and the data downloaded from the LID. There are 3 types of data that need to be uploaded – meter master data, seal data and usage data from the LID. WaterNSW agrees that this should be automated and has submitted a capital allowance for this to be developed, however with other priorities and the introduction of WAVE, this system may not be operational by 1 December 2021 and therefore provision for a manual workaround is required. WAVE will provide the functionality to deliver this solution so

WaterNSW does not think it is prudent to incure costs to develop a manual system that will be replaced in 2 years.

The outcome of this change is to reduce the previous opex allowance request by approximately $2.6 million.

The forecasts from our Metering Reform Response, adjusted for these variables, is represented in Model 1 and forms the base case for this submission. We note that our Metering Reform Response involved WaterNSW managing a material level of financial, operating, technical and reputational risk and that each subsequent adjustment adds an additional element of risk for WaterNSW to manage.

Proposed approach

In addition to our updated forecasts under Model 1, WaterNSW has modelled costs under four additional scenarios (Models 2–5). These models illustrate the impact of varying assumptions regarding the number of meters moving to telemetry as a consequence of customers choosing to opt in:

- Model 2 – 25% of meters move to telemetry;
- Model 3 – 50% of meters move to telemetry;
- Model 4 – 75% of meters move to telemetry; and
- Model 5 – 100% of meters move to telemetry.

The volume of telemetry works under Models 2-5 reflect the aggregate of:

- The number of telemetry meters required under Model 1; and
- The relevant % of non-telemetry meters that remain following application of Model 1.

Therefore, the number of meters that move to telemetry in Models 2-5 is in addition to the number of telemetry meters under Model 1. For example, under Model 4, 75% of the meters assumed to be non-telemetric under Model 1 are classified as 'telemetry' in Model 4.

As the regulations stand today, 5,527 meters need to be connected to telemetry, including 1,066 flood plain harvesting meters.

Table 3: Breakdown of telemetry works by model, FY21-FY25

	FY21*	FY22	FY23	FY24	FY25
Model 1 – no opt in	1,549	2,969	5,259	5,401	5,527
Model 2 – 25% opt in	1,549	4,647	8,150	9,713	10,008
Model 3 – 50% opt in	1,549	6,325	11,041	14,026	14,489
Model 4 – 75% opt in	1,549	8,003	13,932	18,338	18,970
Model 5 – 100% opt in	1,549	9,680	16,822	22,650	23,450

*FY21 is outside the 2021 Determination period. It has been included to demonstrate the full scope of works being undertaken due to the reform.

As noted above, WaterNSW has undertaken a bottom-up build of costs across five models and a number of sensitivities to forecast operating and capital expenditure over the 2021 Determination period for implementing the non-urban metering reform.

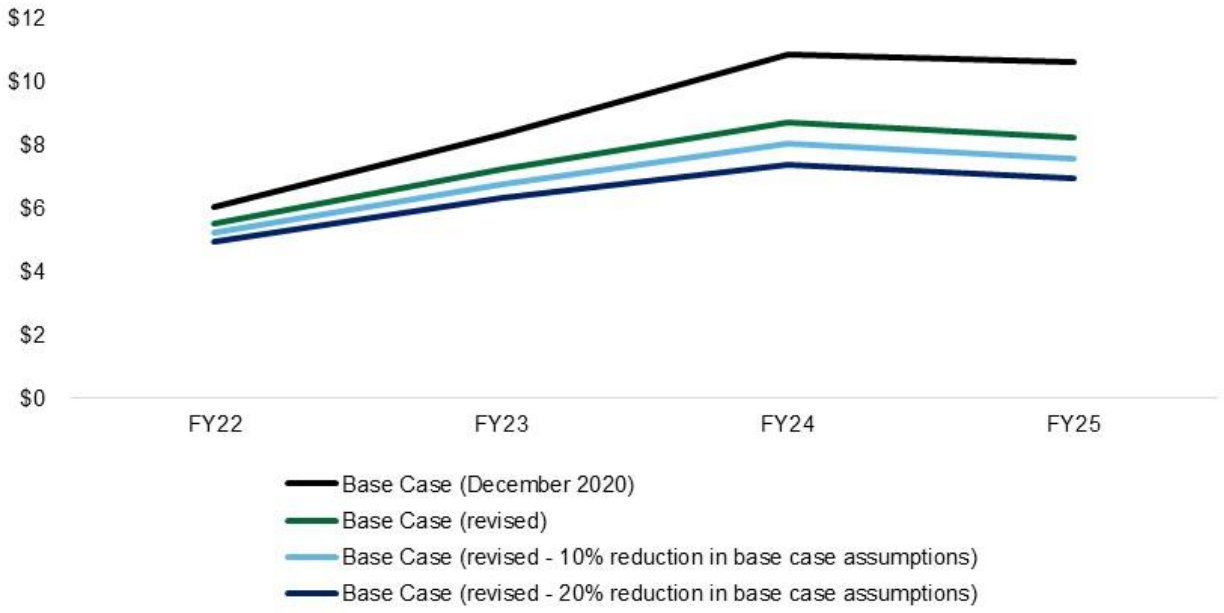
WaterNSW's proposed operating expenditure over the four-year regulatory period is presented below for Model 1.

Table 4: NSW metering scheme management operating expenditure ($millions 2020-21)

	FY22	FY23	FY24	FY25	Total
Downloading LID data 17,923 sites p.a. impacted by FY25	$2.27	$3.01	$3.89	$3.60	$12.76
Customer Self Reporting	$1.04	$1.60	$2.08	$2.12	$6.84
Operating and Maintaining DAS & DQP Portal 5,527 sites p.a. impacted by FY25	$1.25	$1.53	$1.51	$1.53	$5.82
Managing DQP Certificates	$0.30	$0.24	$0.19	$0.02	$0.75
General Enquiries and Education	$0.53	$0.61	$0.72	$0.64	$2.51
Other Activity (processing inactive works and faulty meters)	$0.14	$0.23	$0.31	$0.32	$1.01
Total	**$5.52**	**$7.23**	**$8.70**	**$8.24**	**$29.69**

WaterNSW has undertaken sensitivity analysis on its operating expenditure to assess alternative assumptions and how these might impact on costs. Each of the models presents a 10% and 20% reduction on the base case assumption for a range of key variables.

Figure 2: NSW metering scheme management operating expenditure – sensitivity analysis ($millions 2020-21)



WaterNSW consider the following drivers of expenditure to be a mandatory requirement: downloading LID; operating and maintaining DAS & DQP Portal; managing DQP Certificates; receiving customer self reports; and managing the process for dealing with faulty meters. This is based on NSW Government policy, regulations and legislation, specifically the *NSW Non-Urban Water Metering Policy*, the metering-related provisions of the *Water Management (General) Regulation 2018* and the metering-related provisions of the *Water Management Act 2000*.

WaterNSW considers the following drivers of expenditure to be discretionary: general enquiries; education and communication; data validation; and customer self-reporting follow up activities. However, to ensure the integrity and efficiency of implementation processes and support water users/customers in meeting their obligations and minimise the risk of non-compliance, we believe it is essential to undertake these activities.

In addition, other key assumptions that WaterNSW has made and which are driving the expenditure forecast include:

- Working weeks per annum;
- Travel time between sites;
- Time to download data on site;
- Reporting and data processing requirements; and
- The need for WaterNSW to undertake follow up activities in circumstances where a customer does not self-report.

A significant number of FTEs are required to implement the NSW Government's metering reform. WaterNSW has decided not to include an overhead rate on corporate support costs (such as Human Resources,Finance, Legal, Risk and Compliance and Corporate Transformation) to support the additional field staff. While the use of a form of averaged overhead is consistent with practice in the other determinations, we have set a challenge for ourselves to implement the NSW Government's metering reform, while at the same time reducing our overhead cost.[6]

WaterNSW's proposed capital expenditure over the four-year regulatory period is presented below for Model 1.

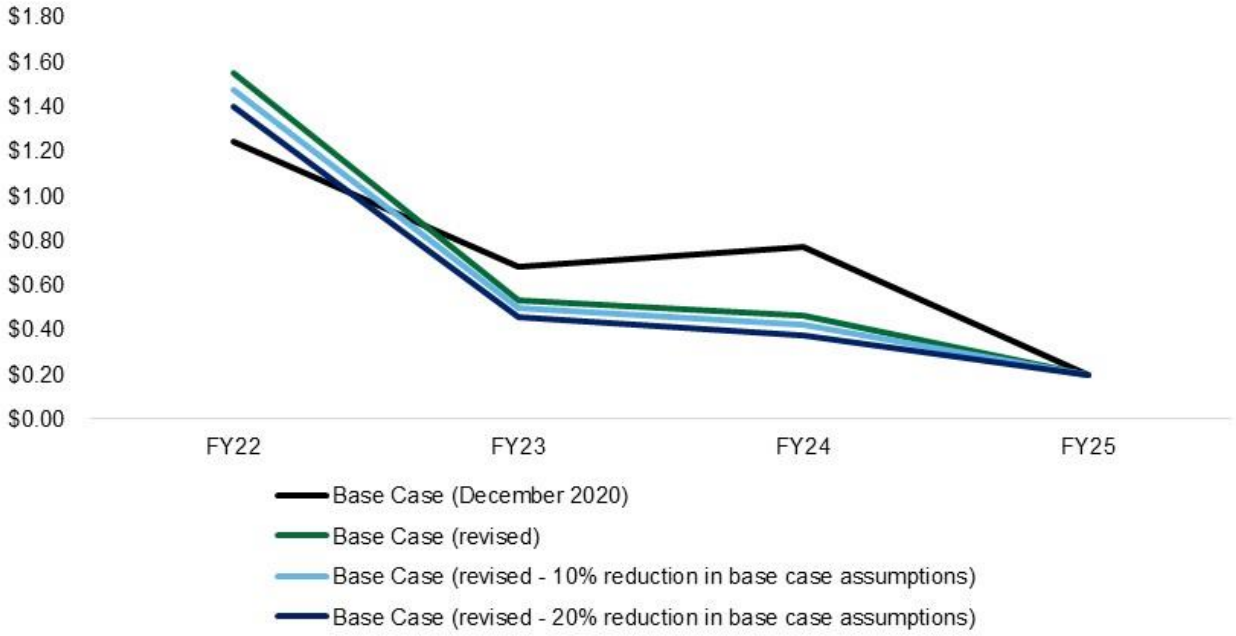
Table 5: NSW metering scheme management capital expenditure ($millions 2020-21)

	FY22	FY23	FY24	FY25	Total
Vehicle capex 25.81 vehicles total FY22-25	$1.03	$0.34	$0.27	$0.00	$1.63
Corporate systens capex	$0.20	$0.20	$0.20	$0.20	$0.79
Capital allowance to automate upload time for initial site inspection	$0.33	$0.00	$0.00	$0.00	$0.33
Total	$1.55	$0.53	$0.47	$0.20	$2.75

WaterNSW has undertaken sensitivity analysis on its capital expenditure to assess alternative assumptions and how these might impact on costs. Each of the models presents a 10% and 20% reduction on the base case assumption for a range of key variables.

Figure 3: NSW metering scheme management capital expenditure – sensitivity analysis ($millions 2020-21)

[6] Relative to the level of overhead proposed in our WAMC 2020 pricing proposal compared to the current period average (actuals). Note: we are proposing a reduction in overhead from the current period into the FY21-25 period for WAMC overhead. The forecast is unchanged despite the need to hire a significant number of FTEs to implement the NSW Government's metering reform.



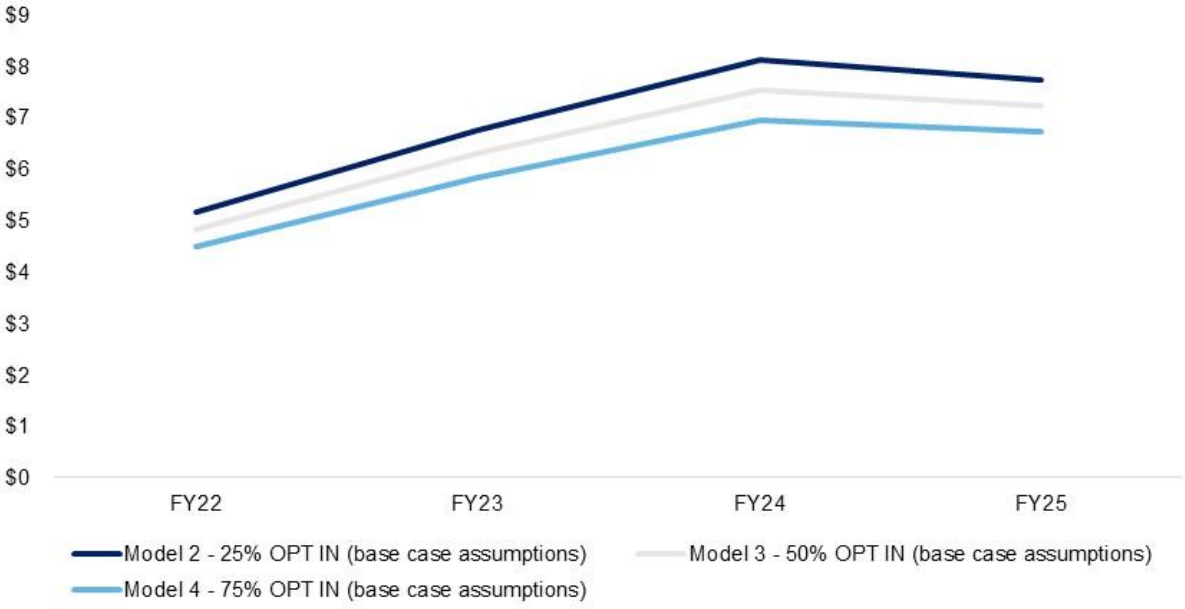
*FY22 includes the capital allowance to automate upload time for initial site inspection. The is forecast to cost $0.33 million and was not included in the draft report.

The most material driver of expenditure (particularly for the initial site inspection and downloading LIDs expenditure categories) is the number of telemetry meter devices.

WaterNSW's operating expenditure over the four-year regulatory period based on varying assumptions regarding the number of meters moving to telemetry as a consequence of customers choosing to opt in: [7]

- Model 2 – 25%; $ 27.83 million;
- Model 3 – 50%; $ 25.94 million; and
- Model 4 – 75%; $ 24.04 million.

Figure 4: NSW metering scheme management operating expenditure – Models 2, 3 and 4 ($millions 2020-21)



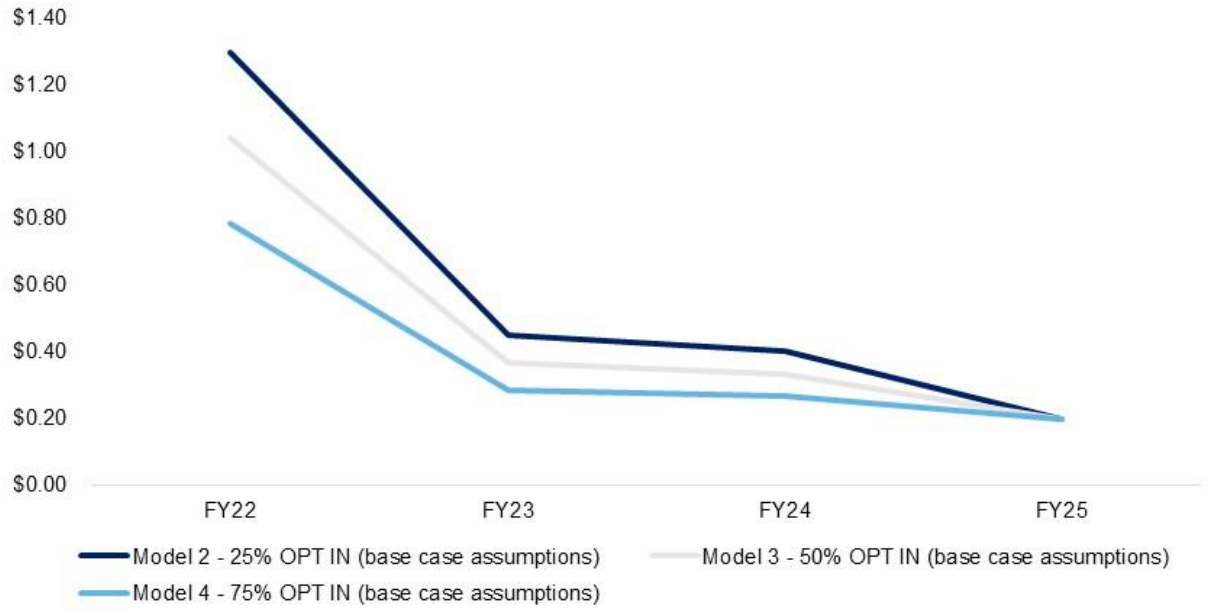
[7] Model 5 (100% of meters move to telemetry) is not shown as this is not considered to be a viable scenario in the absence of Government policy or a supporting subsidy scheme

WaterNSW's capital expenditure over the four-year regulatory period based on varying assumptions regarding the number of meters moving to telemetry as a consequence of customers choosing to opt in: [8]

- Model 2 – 25%; $ 2.34 million
- Model 3 – 50%; $ 1.93 million; and
- Model 4 – 75%; $ 1.53 million.

[8] Model 5 (100% of meters move to telemetry) is not shown as this is not considered to be a viable scenario in the absence of Government policy or a supporting subsidy scheme

Figure 5: NSW metering scheme management capital expenditure – Models 2, 3 and 4 ($millions 2020-21)



Refer to **Appendix C** for a detailed description of the sensitivity analysis performed.

IPART questioned the potential for broader changes in customer behaviour such as consolidation of entitlements, down-sizing meters and/or the trade of water out of NSW as a result of the proposed metering charges. WaterNSW does not expect these changes to be material given historical trends, practicality issues with downsizing/consolidating and the small percentage of total costs that the licence charge per annum represents.

In addition, where practical, key assumptions have been tested against external data points including from metering rollout schemes in other jurisdictions and sectors to provide a top-down validation of costs and approach.

WaterNSW investigated publicly available information for similar compliance rollouts including non-urban metering reforms under different state jurisdictions, metering rollouts from comparable utilities (i.e. electricity) and past internal works completed. It was found that information associated with passive tasks and timings to complete tasks was either limited or confidential. Where external data has been identified and applied in support of assumption or costs, this is identified as part of WaterNSW's response to the issues raised by IPART at **Appendix A**.

WaterNSW aims to ensure the integrity of implementation processes and support water users/customers in meeting their obligations and minimise the risk of non-compliance, therefore when weighing the sensitivities and cost assumptions, **it should be noted that a likely consequence of the lowest cost assumptions is reduced service outcomes for customers and potentially a less efficient cost outcome for customers in meeting the policy requirements**.

3.2 Cost recovery

The issue

WaterNSW proposed two charging elements for its meter reform services:

1 A **telemetry / non-telemetry charge**, based on the meter technology applied to the metering installation. This charge is applied as an annual $/per metering installation, smoothed for the determination period.

2 A **scheme management charge**, applied per licence on an annual basis ($/licence). This category includes the wider costs associated with the introduction of the reform, such as recording and reporting, customer self-reporting, general enquiries and education whereby the benefits extend beyond any individual user.

IPART's preliminary position

The IPART's draft report supports application of the impactor pays principle in determining metering reform cost allocation.

While IPART suggests the cost of upgrading should be carried by the individual meter-owner (net of government subsidies), it queries and seeks feedback from stakeholders on whether scheme management charges should apply to either individual meter owners or all licence holders. That is, to some extent, all water users are driving the need to improve water resource management – not just those that need to comply with the new policy. However, the primary impactor, i.e., those that are predominantly causing the costs to be incurred are each individual meter owner.[9]

WaterNSW response

WaterNSW believes that the proposed approach to cost recovery is consistent with the impactor pays framework. Specifically:

- The telemetry/non-telemetry charge provides a greater degree of transparency for customers regarding the driver of costs through the separation of these costs from scheme management. The approach also seeks to mitigate the impacts of establishment and transition by the recovery of these collective costs across all customers impacted by the program, given the broader benefits of the reform framework and the program's objectives; and

- The scheme management charge reflects that all water users are driving the need to improve water resource management and will benefit from the metering reforms, including improved monitoring, compliance and resource management. This suggests that a portion of the wider costs associated with the reform should be recovered from all licence holders.

We note IPART's view that there are benefits in charging customers variable fees depending on the underlying water source and meter size, if these variables are significant drivers of the underlying costs of installing and servicing each meter type.

The potential for differentiation in charging based on customer type (e.g. size) was a key consideration for WaterNSW in the development of both its metering scheme management services and charges. WaterNSW notes however that:

- Many of the activities and the level of associated effort and cost across the metering scheme management life cycle are homogenous;

- While some activities may have a higher or lower level of actual or perceived complexity depending on the customer's characteristics, complexity is not in itself universally driven by customer type. For example, the complexity of audit activities and enquiries may be greater for large industrial customers compared to smaller residential customers, taking longer to resolve and involving higher costs. Alternatively, small customers may be more likely to fail to self-report, triggering an increased need for follow up activities and engagement by WaterNSW; and

- Those activities with a higher or lower level of actual or perceived complexity are not significant cost drivers.

[9] IPART, Review of WaterNSW's Rural Bulk Water Prices, Draft Report, March 2021, p. 177

Given this, WaterNSW believes the proposed charging arrangements are both consistent with the impactor pays framework and represent an appropriate balance between the pricing principles of equity, transparency and administrative simplicity.

WaterNSW will continue to capture the costs of the activities associated with meter scheme management over the course of the 2021 Determination period to inform future charge development.

The table below identifies the meter reform service charges proposed to be applied over the 2021 Determination period and reflect the forecasts and costs in Model 1.

Table 6: Meter reform service charges

	FY22	FY23	FY24	FY25	Smoothed
Telemetry / non-telemetry (per meter installation)					
Initial proposal	$454.15	$346.78	$337.16	$319.25	$345.04
Model 1	$362.99	$269.70	$238.56	$218.65	$254.38
Variance (%)	-20%	-22%	-29%	-32%	-26%
Scheme management charge (per licence)					
Initial proposal	$48.67	$72.02	$93.83	$95.01	$76.59
Model 1	$54.38	$76.53	$93.81	$90.46	$78.18
Variance (%)	12%	6%	0%	-5%	2%

4. Government-owned meters

4.1 Efficient costs

The issue

WaterNSW proposed implementation and management costs for the non-urban metering reforms for government-owned meters of $27 million. Activities and costs associated with bringing government-owned meters up to regulatory compliance are:

- Capital expenditure required to bring existing government-owned meters into compliance; and
- Ongoing annual operating expenditure to maintain those meters in a condition and to a standard that complies with the new regulations.

There is also ongoing annual expenditure required to manage the metering scheme (this applies to all meters and telemetry, not just government-owned meters). These annual scheme management charges are discussed in section 3.2, as they apply to all meters and telemetry in the same manner.

IPART's preliminary position

IPART expressed concerns regarding the efficiency of WaterNSW's proposed metering reform costs for the government-owned meters, viewing assumptions as potentially overstated and/or not tested or validated. IPART's view was that further work was required to ensure effective and efficient costings.

WaterNSW response

As part of the government reform process, in particular as a result of feedback from stakeholder consultation, WaterNSW will retain ownership of existing government-owned meters, representing around 12% of total meters in NSW. WaterNSW will therefore be responsible for the costs associated with ensuring government-owned meters are compliant with the new regulatory framework. WaterNSW has taken a fleet-based approach to procurement and meeting verification requirements, providing opportunities to reduce costs.

WaterNSW has taken the opportunity to provide a further justification and firming of costs associated with bringing government-owned meters up to regulatory compliance, beyond that contained in its Metering Reform Response.

Appendix A contains a full list of the key issues and assumptions raised by IPART and Cardno in the draft report and, for each issue and assumption, the response by WaterNSW.

4.2 Cost recovery

The issue

WaterNSW owns and maintains government-owned meters and recovers the costs from customers. Government-owned meters are located in the Southern Basin, Hawkesbury-Nepean, and Bega Bemboka regions.

In addition to the telemetry / non-telemetry and scheme management charges discussed in section 3.2, it is proposed that water users with government-owned meters pay an annual meter service charge comprising:

- Operating costs of maintaining the meters and support systems; and
- Annualised capital costs of meter and metering equipment.

WaterNSW also proposed adoption of an 'unders and overs' mechanism ("**UOM**") to mitigate the financial risks inherent in the uncertainty of the forecasts, costs and customers opting out of the Metering Reform Program.

IPART's preliminary position

The IPART draft report supports application of the impactor pays principle in determining metering reform cost allocation. In particular, IPART noted that it considers:

- A 'fee-for-service' approach to charge customers directly for ongoing maintenance work may be reasonable; and
- Ongoing servicing charges for telemetry and non-telemetry meters should reflect the underlying costs of servicing each type of meter, if it is practical to do so (including by underlying water source and meter size if significant).

WaterNSW notes that we are expected to recover only 47% of the capital costs of the government-owned meter upgrades in this determination. This exposes us to significant implementation risk we are willing to take on to assist our government-owned meter customers to become compliant.

IPART has also expressed concern that it is not appropriate for WaterNSW to have an UOM to mitigate its financial risks. IPART believes that WaterNSW should be completing a robust business case to provide assurance that its proposed costs and prices are efficient, as opposed to retrospectively seeking cost recovery for its actual costs which may potentially be inefficient.

WaterNSW response

Table 7 below summarises the three options WaterNSW considered for the recovery of government-owned meter maintenance costs from customers.

Option 1 (service fully funded by regulated charges) provides annual preventative maintenance and inspection (PMI) visits and rectification visits with replacement parts (LID under five years and meters under 10 years old).

Option 2 (service partially funded by regulated charges) provides rectification visits with replacement parts (LID under five years and meters under 10 years old) with premium charges for any rectification work due to lack of PMI visits. The customer provides and funds PMI visits and documentation of, and reporting on, annual site inspections. Customers can ask WaterNSW to provide PMI visits at extra cost to the MSC.

Option 3 (service partially funded by regulated charges) mirrors Option 2 with an additional set WaterNSW PMI visit between years 2 and 3.

Table 7 : Government-owned meters fees and charges

	MSC closed conduit meters (excluding the capital charge)	MSC channel site meters	PMI visits Closed Conduit site meters	PMI visits Channel site meters	Telemetry	Annual compliance checks Channel site meters	Site equipment clean, check and rectification each year
Option 1	$1,269	$9,500*	Included	Included	Included	$1,150	✓
Option 2	$476 to $673	$6,237	Not included	Not included	$345	$1,150	✗ Offer ad-hoc visits at $550
Option 3	$611 to $808	$6,237	$550 (year 3 included in MSC)	$1,700 (year 3 included in MSC)	$345	$1,150	✗ Offer ad-hoc visits at $550

Source: WaterNSW analysis (Option 1 is as per our Supplementary Submission in November 2020)
* For closed conduit it is every five years.

The table below presents the options taking into account the lower telemetry charge resulting from the forecast costs and volumes in Model 1.

Table 8: Government-owned meters fees and charges

	MSC closed conduit meters (excluding the capital charge)	MSC channel site meters	PMI visits Closed Conduit site meters	PMI visits Channel site meters	Telemetry	Annual compliance checks Channel site meters	Site equipment clean, check and rectification each year
Option 1*	$1,178	$9,409	Included	Included	Included	$1,150	✓
Option 2	$476 to $673	$6,237	Not included	Not included	$254	$1,150	✗ Offer ad-hoc visits at $550
Option 3	$611 to $808	$6,237	$550 (year 3 included in MSC)	$1,700 (year 3 included in MSC)	$254	$1,150	✗ Offer ad-hoc visits at $550

* Refers to scenario Model 1 under this submission. The MSC of $1,178 (excluding the capital charge of $601) differs from that of Table 7 of $1,269 as we have updated the telemetry/non-telemetry charge under Model 1, reducing the telemetry/non-telemetry charge from $345 to $254. This table includes the MSC operating expenditure, and the telemetry/non-teleetry charge.

Proposed approach

Of these options, WaterNSW believes that Option 1 provides the optimal outcome for customers by ensuring that meters are well maintained and compliant. We believe that, as the need to manage customer meter reads and undertake periodic attendances at site to download data from LIDs is less efficient than the extraction and processing of data via telemetry, the uptake of telemetry, including as a means of improving reporting and monitoring of water take over time consistent with the objectives of the metering reform program, should be encouraged where appropriate through pricing signals.

With Options 2 and 3, the lack of WaterNSW carrying out annual preventive maintenance visits requires less capability resulting in a higher cost profile for any site works. Under these options

customers carry out the annual checks and it is expected that a more rigorous, time consuming and costly WaterNSW visit would be required. Options 2 and 3 also mean that the customer will be primarily responsible to ensure that their meter remains compliant and they may not be best placed or motivated to do this.

If IPART considers that Option 1 is not in the best interest of our customers, WaterNSW's preference would be to proceed with Option 2, which strikes a balance between the services we offer on behalf of our customers and the prices charged.

WaterNSW also notes that IPART in its draft report queried the proposed MSC of $1,269. This charge includes the telemetry cost of $345, however, the telemetry charge was incorrectly included a second time in IPART's analysis of total customer charges for all government-owned meters.[10] The correct total meter charge for all customers with a government-owned meter is $1,947, rather than $2,292 as stated in the draft report. This was recognised at the public hearing held on 30 March 2021 where IPART noted that its "analysis overstated costs as the telemetry fee of $345 was already included in the proposed $1,269 annual charge for government-owned meters".[11]

WaterNSW notes that the correction of the telemetry fee double-count decreases the annual charge for customers with government-owned meters under Option 1 in the draft report by 15%.

WaterNSW will provide additional services on request

Any services not included in the options above (e.g. vegetation clearance), can be provided by WaterNSW by request. We agree with IPART that some of these additional services, such as those outlined in table 9 below, may be contestable and that there may be an economic case to not set a maximum charge if customers have a choice of who can provide the services.[12] WaterNSW intends to publish a schedule of charges for additional services on its website.

Work that could be undertaken on a contestable basis include replacement of meters, LIDs and complete ancillary equipment replacements for customers, who choose to opt out of the government-owned metering framework.

It is noted however that, as WaterNSW is the warranted owner of the meter, no meter repairs can be provided on a contestable basis.

Table 9 : Optional services

	Site work request	Accuracy dispute testing	Replacement of LIDs (>5years) and meters (>10years)	Charge to leave the fleet[a]	Site ancillary equipment rectification costs
Option 1	✓	✓	✓	Formula	Included in MSC
Option 2	✓	✓	✓	Formula	✓
Option 3	✓	✓	✓	Formula	✓

Source: WaterNSW analysis
[a] Charges related to leaving the fleet are further explained in the next section.

Impactor pays

WaterNSW believes that the proposed approach to cost recovery for government-owned meters is consistent with the impactor pays framework.

We note IPART's view that there are benefits in charging customers variable fees depending on the underlying costs of servicing each type of meter, if these variables are significant drivers of the underlying costs. The potential for differentiation in charging based on factors such as underlying water source and meter size was a key consideration for WaterNSW in the

[10] IPART, Review of WaterNSW's Rural Bulk Water Prices, Draft Report, March 2021, p. 162 - 163, Table 14.1, 14.2
[11] IPART Public Hearing 30 March 2021, presentation slides, slide 14
[12] IPART, Review of WaterNSW's Rural Bulk Water Prices, Draft Report, March 2021, p. 171.

development of its metering scheme management services and charges. WaterNSW notes however that:

- Many of the activities and the level of associated effort and cost across the metering scheme management across the life cycle of service activity are homogenous. For example, LIDs and visits to meter sites cost the same regardless of size (DQP, travel time, etc);
- Those activities with a higher or lower level of actual or perceived complexity and cost are not significant cost drivers; and
- Where there is an activity with a significant cost driver that can be separately identified (e.g. channel sites), a different charge is applied.

WaterNSW believes the proposed charging arrangements under Option 1 deliver the best outcome for a fully maintained and serviced meter site for the customer while adhering to the impactor pays framework.

We accept that Option 2 on balance also achieves an outcome for the impactor pays principle and allows for maximum customer choice on optional/contestable services. The risks for customers under Option 2, however, are that any rectification visits during the four years and work required after four years of no onsite inspections will incur higher charges than the MSC delivers for repeatable work.

Ensuring a fair cost allocation amongst government-owned meter customers

Customers can opt out of the government-owned meters scheme at any time. For those customers that exit the scheme after their government-owned meter is made compliant, WaterNSW proposes to charge an exit fee equal to the pro rata costs incurred since the meter was made compliant, including the upgrades necessary to becoming compliant.

WaterNSW notes that, in the absence of appropriate cost recovery, every government-owned meter customer opting out of the government-owned meter scheme imposes higher costs on other government-owned meter customers which will be borne entirely by WaterNSW.

In regards to consumer protection, prior to initiating the upgrades on government-owned meters, WaterNSW will consult with customers to ensure they understand the terms of the service supplied, such as their rights and privileges under the scheme, including the right to exit the scheme and the costs of termination, for example, decommissioning costs. This will asisst customers in considering the financial consequences of their decisions.

A customer may decide not to take part in the scheme prior to the compliance date, in which case the exit fee will not apply to the customer.

Regardless of whether a customer chooses to participate in, or exit, the government-owned meters scheme, it is envisaged that arrangements between WaterNSW and the customer, including the parties' respective obligations and associated charges, will be documented.

Unders and Overs Mechanism

WaterNSW has undertaken analysis including extensive sensitively analysis, to provide assurance that its proposed costs and prices are efficient. WaterNSW has also assessed the risks associated with its implementation program and identified mitigation measures required, as outlined in the Risk Register at **Appendix B**.

The appropriateness of whether a UOM should apply is typically determined by the ability of the utility to manage risks. In light of the residual risks identified, WaterNSW proposes reinstating a UOM in relation to the meter scheme costs for government-owned meters to address the uncontrollable and unknown risks associated with implementing a new compliance program, uncertainty of the assumptions underpinning forecast costs and customer behaviour, such as opt-out rates. A UOM can complement incentive-based regulation to manage any shortfalls or surpluses in revenue over a given period.

WaterNSW believes the UOM provides a reasonable and balanced solution for the potential risks and uncertainty and notes that the majority of stakeholders that responded to the IPART 2017 Determination did not support IPART's decision to remove the UOM. The UOM shares the risk of volume forecasts and incremental costs being materially incorrect and minimises the risk of any windfall gains or losses for customers or WaterNSW.

A similar approach was provided for in Victoria with the advanced metering infrastructure rollout and the application of a transition charge which was an amount that allowed the distributors to recover from consumers prudent and efficient costs that had not already been recovered. Conversely, a distributor may have had to return an amount to consumers if it recovered costs that exceeded its allowance.

The transition charge amount was determined by[13]:

(a) Applying a 'true up' of costs and revenues that corrects for the difference between the costs as approved by the AER and the distributor's actual revenues from metering charges; and

(b) Incorporating any 'excess' expenditure incurred that the AER determined was prudent, but did not allow recovery of imprudent or inefficient costs.

Another option may be to provide a materiality threshold before the UOM or revenue adjustment applies, which would essentially require WaterNSW to manage the risk and revenue impacts up to the threshold amount before customers are required to share the risk.[14]

With respect to customer choice regarding participation in the government-owned meters program, the UOM seeks to mitigate the financial risks of customers choosing to opt out of the government-owned meter scheme prior to investment. WaterNSW has also proposed an exit fee to mitigate the financial risks associated with customers leaving the government-owned meters program after investment has occurred. WaterNSW notes that, risk – and the need for a UOM - will be materially increased in circumstances where IPART does not accept the proposed application of exit fees.

Bill impact under model 1

Total costs as required for the maintenance and compliance of government-owned meters have been considered as bill impacts on total FY19 actual (representative) bills.

These bills represent the costs of capital and revised MSC. The proposed MSC and the meter capital charge will be triggered when the meter is made compliant. The existing meter service charge will continue to apply in the interim.

Tables 10 – 13 illustrate the percentage increase across bill totals and the regulated, unregulated and groundwater customers groups.

Table 10: Bill impact for government-owned meters transition scheme (total bill)

	FY19 bill (Actual median bill for GW/UNREG), (Representative bill for REG)	Incremental cost of capital charge and updated MSC	Total cost with meter costs	%increase
Representative Reg bill (Murrumbidgee)*	$2,282.09	$1,239.54**	$3,521.63	54%

[13] AER, Final Decision Advanced Metering Infrastructure Transition Charges Application, December 2016
[14] ESCOSA applies a Demand Variation Adjustment Mechanism to SA Water's Revenue Cap with a materiality threshold of 1%. Independent Competition and Regulatory Commission also applies a Demand Volatility Adjustment Mechanism to Icon Water with a materiality threshold of 6%.

Representative Reg bill (Murray)*	$2,765.59	$1,239.54**	$4,005.13	45%
Median unregulated bill	$701.52	$1,235.90***	$1,937.42	176%
Median groundwater bill	$2,824.68	$1,235.90***	$4,060.58	44%

Source: WaterNSW analysis
*assumes GS licence holder with 250ML of entitlements and 60% utilisation. Includes MDBA charges.
** $1,779.13 annual charge per Govt owned meter minus average of existing Rural Valley MSC of $539.59.per annum
***$1,779.13 annual charge per Govt owned meter minus average of existing WAMC MSC of $543.23.per annum

Table 11: Bill impact for government-owned meters transition scheme (regulated customers)

Meter size	$2019-20 MSC	Total cost of scheme **	Variance (%)
50mm	$466.00	$1,779.13	282%
80mm	$468.17	$1,779.13	280%
100mm	$468.16	$1,779.13	280%
150mm	$473.66	$1,779.13	276%
200mm	$476.38	$1,779.13	273%
250mm	$478.90	$1,779.13	272%
300mm	$485.41	$1,779.13	267%
350mm	$514.65	$1,779.13	246%
400mm	$532.06	$1,779.13	234%
450mm	$535.41	$1,779.13	232%
500mm	$549.68	$1,779.13	224%
600mm	$567.95	$1,779.13	213%
700mm	$589.67	$1,779.13	202%
750mm	$620.08	$1,779.13	187%
800mm	$640.63	$1,779.13	178%
900mm	$647.13	$1,779.13	175%
1,000mm	$659.16	$1,779.13	170%
Channel*	$6,107.36	$10,010.01	64%

Source: WaterNSW analysis
* There are no patent approved channel meters. Total cost of scheme includes the meter service charge and capital charge ($601). There are approximately 15 users impacted by the Channel meter charge.
** $1,779.13 per annum is the total cost of the scheme i.e. includes the meter service charge and capital charge. This differs from the incremental cost presented in Table 10 (e.g. minus the average cost of the existing meter service charge).

Table 12: Bill impact for government-owned meters transition scheme (telemetered sites in unregulated and groundwater)

Meter size	$2019-20 MSC	Including cost of scheme*	Variance (%)
50-300mm	$514.31	$1,779.13	246%
350-700mm	$534.41	$1,779.13	233%
750-1000mm	$580.97	$1,779.13	206%

Source: WaterNSW analysis
*$1,779.13 per annum is the total cost of the scheme i.e. includes the meter service charge and capital charge. This differs from the incremental cost presented in Table 10 (e.g. minus the average cost of the existing meter service charge).

Table 13: Bill impact for government-owned meters transition scheme (Non-telemetered sites in unregulated and groundwater)

Meter size	$2019-20 MSC	Including cost of scheme*	Variance (%)
50-300mm	$403.47	$1,779.13	341%
350-700mm	$419.24	$1,779.13	324%
750-1000mm	$455.77	$1,779.13	290%

Source: WaterNSW analysis
*$1,779.13 per annum is the total cost of the scheme i.e. includes the meter service charge and capital charge. This differs from the incremental cost presented in Table 10 (e.g. minus the average cost of the existing meter service charge).

5. Customer engagement

IPART's draft position

In its draft report, IPART noted that it did not consider it appropriate to make a draft decision on metering reform costs, since stakeholders did not have an opportunity to be consulted on the WaterNSW's Metering Reform Response. In particular, IPART noted that it believed WaterNSW should have:

- Consulted with water users and customers on the proposed costs and impacts including affordability and the balance of how these costs should be recovered; and
- Provided clarity to water users and customers on what prices they will be required to pay under its proposed implementation program. If customers have a choice about who provides their meter and support services, this should be clearly identified.[15]

IPART noted however that stakeholders would have an opportunity to comprehensively engage with WaterNSW on its pricing proposal and IPART's preliminary position at the second public hearing on 30 March 2021.

Enagagement to date

As part of our engagement activities with customers and water users, we have followed best practice principles that we apply to all of our dealings with customers. For example, we utilised our 10 Customer Advisory Groups (CAG) (Table 14) where possible to engage on the proposed policy changes and we also participated in government-led engagement activities. We generally meet with all of our Customer Advisory Groups 3 to 4 times per year. This regular and broad consultation forms the backbone of WaterNSW's customer engagement and provides valuable insights and information, as well as serving as an opportunity to meaningfully engage on key issues.

Table 14: WaterNSW Customer Advisory Groups

Customer Advisory Group
Coastal-Hunter
Greater Sydney
Gwydir
Border Rivers
Namoi-Peel
Lachlan
Macquarie-Cudgegong
Barwon-Lower Darling
Murray-Lower Darling
Murrumbidgee

We consult actively and regularly with our Customer Advisory Groups and their preferences are an important input into how we conduct our business. We held meetings with our CAGs in December 2020 specifically on the metering reforms and the activities (and resulting costs) expected of WaterNSW in meeting the new reforms.

In addition to this specific metering discussion, we held valley-by-valley meetings around the state, on subjects requested specifically for each valley, including further metering engagement. As an example, at the Border Rivers CAG meeting on 1 December 2020[16], we provided an

[15] IPART, Review of WaterNSW's Rural Bulk Water Prices, Draft Report, March 2021, p. 179.
[16] Border Rivers Customer Advisory Group, Minutes of meeting, 1 December 2020.

update on the NSW Government's metering reforms including next steps, DQPs, telemetry, recording and reporting, rollout dates, conditions that apply now, rules and standards, path to compliance and government-owned meters. Similar meetings across eight other valleys were also held throughout December, January and February 2021.

We also shared that:

- The NSW Government listened to feedback from water users and decided that Government (via WaterNSW) will retain ownership of existing government-owned meters; and
- Affected customers will be contacted ahead of rollout dates with more information and we will ensure all valid sites are compliant.

We received useful customer feedback from these engagements which helps us to inform how we will implement the rollout program with our customers remaining front of mind.

In total, WaterNSW has completed 28 valley specific meetings with CAGs since December 2020. The majority of these included metering discussions and specific valley questions on the new reform.

We also received useful feedback at the IPART public hearing held on 30 March 2021 including:

- Concerns that government-owned meter customers may opt out after getting the upgrade to make them compliant (addressed in section 4.2);
- Feedback that there appeared to be no efficiencies delivered when increased numbers of water users take up telemetry;
- Concerns that WaterNSW was trying to force smaller water users onto telemetry;
- A lack of understanding about how the policy impacted water users across the state; and
- Confusion from some water users about perceived inequalities regarding compliance obligations.

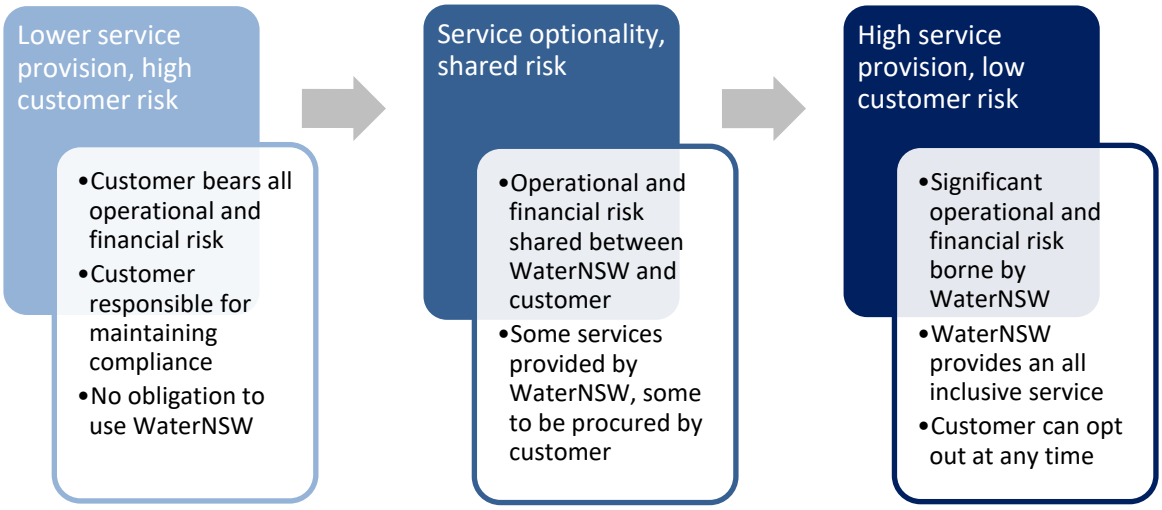
Engagement going forward

WaterNSW appreciates the significant changes the NSW Government has introduced through its new metering framework, and we have developed a customer-focused approach to engage on this key reform. This is additional to our regular engagement process.

We have an important role in ensuring we help our customers become and remain compliant with the new metering requirements and we will assist customers through the implementation process by providing appropriate levels of service to customers with privately-owned meters and those with government-owned meters.

We have centered our proposed approach on our customers.

Figure 6: Service options



Customers with privately-owned meters have the responsibility for ensuring compliance with the new metering framework on their own meter installations at their cost. WaterNSW has set aside time and resources to assist in implementing the obligations in the most customer-centric manner providing valuable advice on meeting compliance. This includes for example, allocating time to speak with the customer's meter installer to ensure timely connection.

For customers with government-owned meters, we are proposing to provide and all-inclusive service where WaterNSW essentially bears all the risk of meter compliance, allowing these customers to spread their payments out over time thus providing them important cash flow benefits and assisting to manage affordability impacts of the transition.

WaterNSW has adopted a 'four principles' approach for both engagement and implementation for customers with government-owned meters, focused on:

- **Efficient and prudent use of resources** – WaterNSW will only do what is required by the regulations in making the metering equipment compliant;
- **Minimal disruptions to customers** – The work will be done at the customer's convenience working around their business operations;
- **Individual engagement** – WaterNSW will talk with every customer who has a government-owned meter to understand what they want to do and discuss their options; and
- **Customer choice** – Customers will have the option to opt out of having a government-owned meter if they so wish, at any time (noting that an exit fee reflecting the costs incurred in making the meter compliant may apply).

In developing our engagement approach, we have focused on providing customers with effective communication throughout the process – from understanding and aiming to minimise potential disruptions for the customer through to ensuring the customer understands the choices available to them.

We have developed an individual engagement model for customers with government-owned meters that involves allocating time and resources for each customer. This empowers our customers by providing the information necessary to make informed decisions that best serve individual needs. We have also proposed an approach that gives our customers a choice as to:

- Whether they wish to remain on a government-owned meter scheme; and
- What level of service they wish to procure from WaterNSW.

Giving customers choices about what product they wish to adopt and how to maintain it over time to ensure they remain compliant is at the heart of our customer-centric approach to implementing the metering reforms.

The four principles combine to provide an implementation journey for the customer that empowers them to make informed decisions and implements the roll-out in a manner that minimises unnecessary impacts to their business.

WaterNSW understands the importance of effective customer engagement, especially during period of significant change for customers with both government-owned and privately-owned meters, and is committed to providing clear customer information and education to all of its customers throughout the implementation journey. Providing tailored journeys for customers based on a risk and responsibility allocation enables WaterNSW to deliver services in the most cost efficient manner while still providing all customers with the information they need to make informed decisions.

WaterNSW will continue to leverage its Customer Advisory Groups to provide avenues to disseminate information and better understand the concerns of customers in particular valleys. WaterNSW will also utilise the customer feedback to continually improve its processes over the course of the implementation.

This is in addition to the core customer engagement and education activities within the meter reform program, including customer mailouts on obligations, managing online materials and providing education, contact information and service processes for customers and service providers.[17]

Appendix G contains WaterNSW's responses to the specific questions asked of stakeholders in the 2021 Draft Determinations for Rural Valleys and WAMC relating to non-urban metering reform.

[17] WaterNSW, Meter Reform Response, p. 11-16

APPENDIX A: Response to issues raised in the draft report

The following table identifies the key issues and assumptions raised by IPART and Cardno in the draft report and, for each issue and assumption, the response by WaterNSW.

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
Key issues raised			
Validating key metering cost and activity assumptions	Primary drivers of costs were identified and assessed.	Potential sensitivity of the forecasts to assumptions should be conducted. WaterNSW should have undertaken appropriate cost-benefit analysis of its proposed implementation program and developed a more robust pricing proposal to provide greater assurance of its assumptions	WaterNSW has undertaken extensive sensitivity analysis to assess alternative assumptions relative to the base case and how these might impact on costs. Refer to to section 3.1 and **Appendix C** for detail.
Cost and activity learning feedback	Fee for service based on current efficient cost estimates.	Data should be collected from the initial stages of implementation and be fed back into annual updates of the implementation program.	Enhanced processes for data capture and reporting have been identified for implementation. WaterNSW will continue to capture the costs of the activities associated with meter scheme management over the course of the 2021 determination period to inform future charge development.
Private meters: cost recovery	WaterNSW proposed two charging elements for its meter reform services: • A telemetry / non-telemetry charge, applied as an annual $/per metering installation, smoothed. • A scheme management charge, applied per licence on an annual basis ($/licence).	IPART supports application of the impactor pays principle in determining metering reform cost allocation. While IPART suggests the cost of upgrading should be carried by the individual meter-owner, it queries and seeks feedback from stakeholders on whether scheme management charges should apply to either individual meter owners or all licence holders.	WaterNSW believes that the proposed approach to cost recovery is consistent with the impactor pays framework. Specifically: • The telemetry/non-telemetry charge provides a greater degree of transparency for customers regarding the driver of costs through the separation of these costs from scheme management. The approach also seeks to mitigate the impacts of establishment and transition by the recovery of these collective costs across all customers impacted by the program, given broader benefits of the reform framework. • The scheme management charge reflects that all water users are driving the need to improve water resource management and will benefit from the metering reforms, including improved monitoring, compliance and resource management. This suggests that a portion of the wider costs associated with the reform should be recovered from all licence holders.

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
			The potential for differentiation in charging based on customer type (e.g. size) was a key consideration for WaterNSW in the development of both its metering scheme management services and charges. WaterNSW notes: • Many of the activities and the level of associated effort and cost across the metering scheme management life cycle are homogenous; • While some activities may have a higher or lower level of actual or perceived complexity depending on the customer's characteristics, complexity is not in itself universally driven by customer type; and • Those activities with a higher or lower level of actual or perceived complexity are not significant cost drivers. Given this, WaterNSW believes the proposed charging arrangements are both consistent with the impactor pays framework and represent an appropriate balance between the pricing principles of equity, transparency and administrative simplicity.
Program delivery: identification of program risks	WaterNSW considers there is uncertainty and "an element of stepping into the unknown" with the metering reforms (inherent uncertainty of the forecasts, costs and customer behaviour, e.g. opt-out rates). WaterNSW proposes the use of an UOM mechanism to protect all stakeholders from the risk of windfall gains or losses arising from the implementation of the reform program.	WaterNSW has not made a corresponding assessment of the risk of this uncertainty to implementation of the reform. IPART consider that it is not appropriate for WaterNSW to have a UOM mechanism to mitigate its financial risks. WaterNSW should have assessed the risks and opportunities with its implementation program and identify any mitigation measures required.	WaterNSW has assessed the risks associated with its implementation program and identified mitigation measures required, as outlined in the Risk Register at **Appendix B**. In light of the residual risks identified, WaterNSW proposes reinstating a UOM in relation to the meter scheme costs for government-owned meters to address the uncontrollable and unknown risks associated with implementing a new compliance program, uncertainty of the assumptions underpinning forecast costs and customer behaviour, such as opt-out rates. A UOM can complement incentive-based regulation to manage any shortfalls or surpluses in revenue over a given period. WaterNSW believes the UOM provides a reasonable and balanced solution for the potential risks and uncertainty and notes that the majority of stakeholders that responded to the IPART 2017 Determination did not support IPART's decision to remove the

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
			UOM. The UOM shares the risk of volume forecasts and incremental costs being materially incorrect and minimises the risk of any windfall gains or losses for customers or WaterNSW. A similar approach was provided for in Victoria with the advanced metering infrastructure rollout through the application of a transition charge. Another option may be to provide a materiality threshold before the UOM or revenue adjustment applies, which would essentially require WaterNSW to manage the risk and revenue impacts up to the threshold amount before customers are required to share the risk. The UOM seeks to mitigate the financial risks of customers choosing to opt out of the government-owned meter scheme prior to investment. WaterNSW has also proposed an exit fee to mitigate the financial risks associated with customers leaving the government-owned meters program after investment has occurred. WaterNSW notes that, risk – and the need for a UOM - will be materially increased in circumstances where IPART does not accept the proposed application of exit fees.
Program delivery: successful and timely rollout	Legislation underpinning the new metering framework has commenced and will be rolled out over a five-year period, starting with the largest consumers of water and then progressively implemented on a region-by-region basis.	WaterNSW has been challenged as to how achievable the works program is to install compliant meters and/or the associated periphery technology to meet the new reform requirements.	The proposed metering rollout realises the benefits of the policy objectives. WaterNSW's role is to facilitate the compliance and provide support to customers. The supplementary pricing scheme has been developed using estimates and assumptions that are reasonable based on information and knowledge available and are largely commensurate with the risks and uncertainties related to the implementation of the non-urban metering reform.
Government-owned meters: telemetry charges	The Meter Service Charge proposed ($1,269) provides a fixed annual charge for water users and risk free service to include a range of services necessary to establish and maintain compliant meters. This	IPART's draft report gave a total meter charge for those with a government-owned meter of $2,292, incorrectly overstating the total meter charge of $1,947. This issue derives as the telemetry / non-telemetry fee of $345 was already included in the proposed $1,269 annual	This issue was noted in IPART's public hearing held on 30 March 2021.[18] We note that this correction decreases the annual charge for customers with government-owned meters stated by IPART by approximately 15%.

[18] IPART Public Hearing 30 March 2021, presentation slides, slide 14,

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
	charge includes the telemetry / non-telemetry cost of $345 per meter.	charge for government-owned meters.	
Government-owned meters: costs	Government-owned meters will be limited to those already in place, and will not be extended to any other customers who wish to have a government-owned meter. WaterNSW will be responsible for the costs associated with ensuring government-owned meters are compliant with the new regulatory framework. WaterNSW has taken a fleet-based approach to procurement and meeting verification requirements, providing opportunities to reduce costs.	WaterNSW's proposed metering reform costs for the government-owned meters are not considered efficient because assumptions are "overstated and/or have not been tested or validated". IPART's view is that without more work done to ensure effective and efficient costing, WaterNSW should maintain its existing metering charges.	WaterNSW has taken this opportunity to provide a further justification and firming of costs associated with bringing government-owned meters up to regulatory compliance. We note that provision for end of life will be addressed through in the next determination period.
Bill impacts	Total costs as required for the maintenance and compliance of government-owned meters have been considered as bill impacts on representative bills.	IPART considers that customers should only be paying for costs which are efficient. WaterNSW's MSC for customers and water users with government-owned meters means that such customers face significantly higher charges than those with customer owned meters. However, this excludes the private costs of purchase, installation and maintenance associated with customer owned meters, which may be significant. WaterNSW should provide clarity to water users and customers on what prices they will be required to pay under its proposed implementation program.	Justification and firming of efficient cost estimates are provided. Clarity to be provided to customers on what prices they will be required to pay under the proposed implementation program. If customers have a choice about who provides their meter and support services, this will be clearly identified. For MDB valleys, it should also be noted that IPART is required to set prices according to the Water Charge Rules 2010. As quoted by IPART in the 2021 Rural Valley Draft Determination, this means we must set prices that are likely to recover the efficient costs of delivery services, and have no flexibility to set lower prices for affordability reasons.
Customer engagement	WaterNSW will undertake consultation with customers on the proposed charges and supporting framework through its Customer Advisory Groups in early 2021.	IPART commented that 'customers are not informed of potential pricing impacts to account for in business planning and WaterNSW is not informed of how customers may respond to the policy'. IPART considers that WaterNSW should have consulted with water users and customers on the proposed costs and impacts including affordability and the	Customer consultation is ongoing and includes the recent IPART public hearing held on 30 March, 2021 and customer advisory groups in early 2021.

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
		balance of how these costs should be recovered	
The proposal does not meet WaterNSW's own assurance framework 'Approval to Spend'		An assurance framework evaluates and governs expenditure, contains many elements of good practice for assurance over expenditure. WaterNSW should complete a robust business case under Approval to Spend framework or the assurance framework administered by InfrastructureNSW for infrastructure projects. Cardno commented that WaterNSW documentation setting out plans for implementation of metering reform did not use the Approval to Spend Framework documentation. WaterNSW's proposal lacks the rigour and level of maturity that would expect to see for an initiative of this level of materiality and inherent risk.	As this is a compliance driven project, we have not applied Need analysis under WaterNSW's Approval to Spend framework and have focused on Options analysis and Delivery Planning (i.e. the need to apply the policy is assumed). WaterNSW has completed an options assessment to demonstrate that the preferred approach is the most efficient and sensitivity testing of key assumptions influencing cost. Options for program delivery have been considered at both Executive and Board level, and a preferred option identified. Our delivery planning is underway and our program risks are being actively managed through our risk register. We note that governance and oversight of the program has included: • Papers and assumptions in relation to WaterNSW's submission presented to the Board for review and comment in November 2020; • Meter Reform Steering Committee established to oversee and embed the reforms within the organisation. This committee is a decision-making forum attended by the CEO, CFO, Executive Manager Customer and Community, Executive Manager Business Systems and Information; and • CEO review and approval of this submission and options analysis.
Risk allocation	WaterNSW will manage customer's ability to become and remain compliant	A robust implementation program should have good practice risk management including consideration of who is best placed to manage risk.	WaterNSW will provide a service option where it bears the risks involved in ensuring that customer meters remain compliant. While there are options allowing customers to procure these somewhere else, it is likely that WaterNSW will ultimately bear the compliance risk.
Metering scheme management			

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
Number of working weeks in a year for all staff is overly conservative	Assumption of a 40 working weeks per annum for all staff.	An increase to an assumed 45 working weeks per annum for all staff would significantly reduce the operating expenditure.	Total available working weeks per annum has been adjusted from 40.04 to 40.66 based on feedback regarding staff utilisation (~$0.4m reduction in costs). Cardno's proposed assumption to use a 45 weeks will result in underrecovery of costs related to employee entitlements and hence labour costs will not be fully loaded.
Time allowed to upload/download data for each inspection	Initial site visit - average download time on site if correct (non-telemetry): 0.8 hours Initial site visit - average download time on site if correct (non-telemetry): 0.8 hours Ongoing site visit – Annual site visit: 0.5 hours Data upload time: 24 minutes.	Cardno note that download time is a key assumption as salary costs comprise over 90% of the total forecast over the four-year determination period. Cardno also considers that data upload is largely a passive task, and therefore is not a valid task to be costed and included in the estimates for the initial inspection activities.	Average download time is now modelled in sensitivity testing, see **Appendix C:** • Initial site visit - average download time on site if correct (non-telemetry): base case, 10% variation on base case, 20% variation on base case; • Initial site visit - average download time on site if incorrect (non-telemetry): base case, 10% variation on base case, 20% variation on base case; and • Ongoing site visit – annual site visit: base case, 10% variation on base case, 20% variation on base case. The upload time for initial site inspection over the reform rollout has been decreased. WaterNSW included a provision for a customer field officer to manually upload data once a site has been visited and the data downloaded from the LID. WaterNSW agrees that this should be automated and has submitted a capital allowance for this to be developed, however with other priorities and the introduction of WAVE, this system may not be operational by 1 December 2021 and therefore provision for a manual workaround is required WaterNSW notes Cardno's comments that the *passive costs* related to download time should not be recovered. We note however that in terms of effort, this involves the act of downloading an LID including a safety check, cutting the security seal, unscrewing and opening the device, accessing the portal, downloading the data, resealing the LID, and attaching a new security seal.

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
Staff annual salary escalation factor	2.5% annual salary escalation rate for all staff.	Cardno considers that the expenditure items submitted to IPART should be in a consistent price base. As a result, they consider that the 2.5% escalator should be removed from the model so that the salary costs are reported as real costs.	Expenditure items are now submitted to IPART at a consistent price base.
Total corporate systems capex (required for field work) had been double counted	This item was included in 'capital expenditure forecast' and then incorrectly included again in 'Downloading LID data'.	Double counting was reconciled in review.	This issue has been resolved and the double count in IPART's draft report has been removed from the figures presented in this submission.
Staffing of field activities and their associated costs	Initial site inspections consist of labour costs, vehicle costs, accommodation and sustenance costs. Under the conditions of its operating licence, WaterNSW has to undertake these activities and is not able to outsource the field work.	Forecast costs for the initial site inspections highlight that the activity is heavily dependent on the assumed costs associated with getting to the sites more so that the costs involved with the physical tasks on site. This presents a case that delivering these activities using internal staff resources might not be the most efficient approach to undertaking the field activities.	Under the conditions of its operating licence, WaterNSW must undertake these activities and is not able to outsource the field work. Assumed costs have now been modelled in sensitivity testing: • Travel time - base case, 10% variation on base case, 20% variation on base case scenarios; and • 'Other' salary costs for each Field Officer and Team Leader have been adjusted from $25,000 per annum to $15,000 per annum (~$1.0m reduction in costs. Please refer also to Appendex F.
Impact of installing % all telemetry meters	The decision was made by DPIE for surface water customers with meters over 200mm to be telemetered, and costs have been derived based on this known information and obligations'.	WaterNSW has not undertaken a detailed assessment of telemetry nor completed any modelling to assess the cost impacts of installing telemetry on all meters. The WaterNSW cost forecasts assume that only water users with meters greater than 199mm who are required to install telemetry will have telemetry. No assumption has been made for water users with meters less than 200mm who might voluntarily install telemetry. As such, WaterNSW's forecast costs for downloading LIDs not connected to telemetry are likely to be overstated.	WaterNSW has modelled costs under four scenarios (Model 2–5) that illustrate the impact of varying assumptions regarding the number of meters moving to telemetry as a consequence of percentage of customers choosing to opt in. Further details can be found in **Appendix C**.
Telemetry / non-telemetry costs	WaterNSW propose equal costs for telemetry and not telemetry meters	IPART questions whether the costs associated with installing telemetry and non-telemetry meters be the same	In assessing the price for telemetry services, WaterNSW noted the incremental costs of telemetry were higher than the costs of non-telemetry due to the lack of volume on the uptake of telemetry in the short term.

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
			We equalised the telemetry and non-telemetry charge by rebating the cost reflective telemetry charge. The arrangement of equalising the charges provides an incentive for customers to install telemetry. Over time, we expect the cost of non-telemetry will exceed the cost of telemetry if there is sufficient (mandatory and voluntary) uptake of telemetry. We consider this arrangement to be consistent with the outcomes of a competitive market environment, but wanted to ensure that the pricing structure did not disadvantage the take-up of telemetry.
Staffing to maintain the Data Acquisition Service (DAS) and Duly Qualified Person (DQP) Portal	WaterNSW has assumed a total of four FTEs will be required, totalling $2.84 million over the four-year determination period.	Cardno has noted the lack of detail regarding the assumptions of work tasks involved, whether four FTEs would be required and whether these would be internal or outsourced. Salary costs included by WaterNSW for operating and maintaining the DAS and DQP Portal constitute 49% of the overall forecast for the activity.	WaterNSW has undertaken significant work to clarify what it expects the staffing that will be required to manage the DAS and DQP portal. WaterNSW has updated its submission with its new estimates and provided a detailed explanation of these activities as well as how these staff numbers grow with an increase in the number of opt in telemetry customers . The support requirements include managing the vendor, LID testing and approval process, firmware upgrades, technical support and the ongoing day to management of the systems ensuring the systems are working as expected and are accessible to market participants (including any enhancements and bug fixes). Due to the specialised nature of the systems, at this stage, WaterNSW believe that internal contracted staff provide the most cost effective and prudent solution Currently telemetry in the field is managed by one external consultant as telemetry has only been applicable to those water users with government-owned meters. WaterNSW now need to provide technical and operational support to up to 100 DQPs as well as thousands of customers. WaterNSW carries the risk that the support requirements for the DAS and DQP portal are more significant than its forecast. We believe that once the DQPS are fully trained and experienced with the new systems, the level of support will decline over time. However having gone live with the

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
			DQP Portal and with DQPs using the service, our forecasts are likely to be an underestimate in the immediate term.
Data processing hours required	WaterNSW proposed an operating expenditure forecast for data processing that was assigned to specific tasks and their assumed times. Five of these tasks comprise 89% of total time for data processing, including total time to process non telemetry-manual; total time - random sampling; total time to follow up; total time to process non telemetry-digital; and total time for estimated reads. Assumptions: • time to process = 0.25 hours • random sample = 10% of total meter reads processed • assumed 50% of customers not reporting needing follow-up.	Cardno has signalled that although the majority of these tasks have straightforward calculations, the outputs are heavily dependent on unsubstantiated assumptions. For instance, the number of meters to be installed and/or made compliant is heavily dependent on WaterNSW achieiving the works program. Changes to key assumptions for these five tasks, especially those around processing time, % of meters sampled and % of customers needing followup, can have a large impact on the total time to complete the tasks, the calculated FTEs and the salary costs that make up all of the operating expenditure for the processing data activity.	The percent of data submissions that are digital is currently 77%, and WaterNSW is assuming the proportion of manual submissons will decrease going forward and a 80%/20% base case assumption was considered reasonable. Sensitivity modelling includes base case, 10% variation on base case, and 20% variation on base case scenarios for percent of meters sampled for accuracy; time spent sampling a meter, time to perform an estimated read on a meter, time helping customers register for the digital platform. WaterNSW believes that the base case is an appropriate sharing of risk between WaterNSW and customers based on experience and reasonable assumptions regarding future behaviour. See **Appendix C** for further details.
On site telemetry costs (all compliant meters)	WaterNSW proposed an annual $345 on site telemetry cost per metering installation for all compliant meters.	Cardno analysis found that there is no granular cost-build up available for on-site telemetry costs and therefore unclear what is included in telemetry costs.	This figure considers the yearly costs of the program, averaged over four years. This was generated to match a possible efficient private cost of telemetry and is under review by our WaterNSW BSI team as they look to negotiate best price possible. The $345 represents the equalised costs of telemetry/non-telemetry as per our submission which is being reviewed by Cardno. We have included the $345 in the proposed MSC to represent the full cost of the service and to consolidate the number of charges presented on the customer's invoice (for government-owned meters). To avoid a double count, WaterNSW would not apply the $345 telemetry/non-telemery charge on government-owned meters.
Government-owned meters			

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
Contestability	Customers and water users who currently have a government-owned meter can opt out of the scheme.	The ability to opt out suggests that customers have a choice about who provides their meter and support services. If this service is contestable, there may be an economic case to not set a maximum charge if customers have a choice of who can provide the metering service.	WaterNSW considers that the activities of water data management, including the collection of user data and meter reading or water take activities (e.g. electronic and physical) are declared to be monopoly services. These activities are not only linked to the non-urban metering policy, but are also required for the administration of the NSW Government's water management and planning laws and regulations. These activities are also supported by the requirements in the WaterNSW operating licence. For example, including but not limited to the requirement to operate the DAS and DQP, the requirement to account for water, and the requirement to manage the accuracy of take to billing, account management and reporting. With respect to Government-owned meters, WaterNSW considers these assets/services to be declared as a monopoly service under the IPART framework (e.g. Unregulated Rivers and Groundwater Sources). We also consider these assets/services to be regulated under the ACCC Framework (e.g. Regulated Rivers). WaterNSW would be pleased to assist IPART in its consideration as to whether metering services are monopoly services. Some additional services can be provided by WaterNSW by request and we agree that some of these additional services may be contestable. WaterNSW intends to publish a schedule of charges for additional services on its website.Work that could be undertaken on a contestable basis include replacement of meters, LIDs and complete ancillary equipment replacements for customers, who choose to opt out of the government-owned metering framework.
Regulated prices	WaterNSW intends to set a regulated pricing system for government owned meters	IPART asks what the implication would be for customers, water users and Water NSW if IPART doesn't set a regulated price for the MSC for government owned meters?	From WaterNSW's perspective, it would be inconsistent with regulatory precedent not to set a price for Government-owned meters. There is significant regulatory risk on WaterNSW if IPART decides to reverse its decision at the 2025 price review.

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
			We note the following precedents: • In 2014, the ACCC considered that metering services for regulated customers were provided in relation to water service infrastructure and where therefore regulated under the ACCC pricing rules. • Metering services for groundwater and unregulated customers are subject to the IPART pricing framework. The WAMC determination established a meter service charge to recover the operating cost of maintaining Government owned groundwater and unregulated meters. • There is a precedent for setting capital charges for metering services and activities: In relation to regulated customers, in the ACCC 2014 Determination, the ACCC approved a meter service charge to recover both the operating and capital cost of installing and operating Government-owned meters on customer extraction sites, where the cost was not offset by Commonwealth grant funding and where the customer decided to use a Government owned meter.
Consumables	WaterNSW has included an annual allowance for $75 of consumables per compliant meter. This amount is based on service visits from previous five years.	Cardno notes that the majority of consumables are unlikely to be expensive items with the exception of antennas and batteries. Therefore, this number could be overstated.	The $75 cost per compliant meter is based on the previous five years of costings from the subcontractor and considers an average of all consumables included in the daily rate when invoiced across the fleet. Costing includes stock of all possible required consumables by the subcontractor (e.g. batteries, seals, concrete, solar panels, flanges, ant sand, pipe supports) and the maintenance of vehicle stores and tools. All or most sites require tamper seals, battery and antenna replacements, and some sites additionally require more expensive items to complete service visits. WaterNSW notes that the cost model may change over time as all sites have new LIDs installed and the failure/replacement model for the new technology is developed.

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
Resealing meters/LIDs	Meters/LIDs assumed to be resealed annually. It is estimated that this will take 0.5 hours each time at a rate of $150 per hour. LID to be tested on each visit including checking of the alarm and capability of DAS data transfer.	Cardno has raised a question as to whether this task is likely to take the proposed 0.5 hrs each time and as such causing overestimation of forecast.	This data is based on time and rates provided by the existing contractor.
LID vendor	WaterNSW has incorporated lower costs for LIDs based on a new vendor. WaterNSW noted that the current LID costs vary between $1,200 and $2,500 depending on the functionality required.	As the new vendor is untested, there is a risk to WaterNSW if the vendor cannot deliver on the project quantities or meet its procurement requirements.	A variety of quotes have been obtained to provide competitive pricing with the deliverability of the vendor also considered. Since starting the program in January 2021 we have negotiated decreased pricing for LIDs of between $700 and $1,800. In most cases the $1,800 model is the best choice for the customer.
Validation	Validation for the 2,822 government-owned meters has been costed by WaterNSW at a unit cost $1,150. This is based on market experience and previous work with Comdain. Most efficient route proposed: Taking into account all sites instead of focusing on sites needing compliance by specific dates.	Cardno has indicated that although tasks for the validation process have been provided there is not the build-up granularity of costing required to fully assess assumptions and their overall impact on costs. Cardno also noted that travel times from the two site visits for validation field activities cannot be confirmed and it is unclear as to whether WaterNSW will engage with local DQPs for site visits or use internal DQPs.	Estimated costings are based on work with existing contractor and market experience. First cohort validation is currently underway and experience-based learning is being utilised to write procedures on how to effectively and efficiently install going forward. Travel models have been used for efficient costing from the previous installation program and on-going maintenance and will continue to be used going forward WaterNSW will increasingly engage regionally based DQPs over the course of the rollout as it progresses in each region, to achieve efficiency of costs and personnel.
Excavation of buried meters	A portion of buried meters will need to be excavated in order to verify actual installations with records. The $5,000 excavation unit cost is based on WaterNSW's recent costs from moving buried meters last year: ranging from $3,500 to $9,000.	The method of averaging unit cost to a $5,000 rate for all instances seen as a risk. This is because of site specific circumstances (e.g depths of meters) and the small sample size used for estimation that may not be fully representative. Unit costs could also be understated due to WaterNSW's changed excavating intentions from 100% buried meters to 10% (i.e. missed efficiencies from using dedicated teams) In addition, no evidence to support that 10% is an appropriate number of buried meters to excavate to verify the installation for compliance purposes has been provided.	WaterNSW agrees that costs related to excavation are site specific, and has endeavoured to acquire accurate quotes for these activities. An average cost of $5,000 for each excavation is based on the hire of a digger, spotter, and DQP time with quotes coming from WaterNSWs previous installation subcontractor with review of a sample of "as is" drawings and documentation. Most pipes are buried as high up as possible to save on costs to the land holder who would have installed the pipe. WaterNSW is excavating the meters to provide itself with confidence that maters are compliant and buried correctly.

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
Removal of above ground meters	A 10% sample of above ground meters are to be removed.	Cardno notes that the basis for the assumed 10% is not known. It would be expected that there would be a confirmed number of meters needing to be removed due to environmental or safety reasons rather than a need for assumptions.	This issue is the same for any customer who wishes to leave the fleet. WaterNSW's default position will be to leave the meter in-situ where it just acts as pipe, but if the customer doesn't need a meter and wants to leave the fleet they may request meter removal and rectification of the pipework on site. The safety and environmental issues are relevant where a customer requests meter removal where leaving it on site may cause an issue.
Non-pattern approved meter replacement	WaterNSW identified 33 non-pattern approved meters in the government-owned meter fleet that need to be replaced for not meeting alternative pathway approach. $15,650 is the assumed cost per meter based on previous work by Comdain and analysis of current market costs for meter replacements.	Cardno analysis has not confirmed numbers but would expect that the 33 meters included in the cost build-up should be able to be accurately reported by WaterNSW.	WaterNSW notes that meters were installed under different requirements and standards over time. New regulations are size-based where installations were % of meters on the water source. WaterNSW is currently checking all water sharing plans, water taking conditions on licences, historic reason for a meter and the new regulation thresholds for each meter site. We aim to provide the water taker the choice to opt out of the fleet if there is no requirement or benefit in keeping the meter, or keeping the meter in our fleet. All non-pattern approved sites will be reviewed to see if it's more cost effective to go down the meter replacement, or pathway to compliance or ask the customer to provide their own solution.
Government-owned meters: scheme administration	WaterNSW scheme administration has an allowance of three contract FTE's to administer the government-owned meters compliance program. Costs include salary and on-costs plus additional allowances for travel, vehicles, mobile phones, PPE, legal costs, postage and other minor costs.	No detailed cost-build up on the estimated annual scheme administration. Concerned that the proposed $770,000 estimate is equivalent to approximately $257,000 per person.	This estimate is for three project staff growing to five as workload increases in 2022. This also allows for other discrete administration tasks for desk-top data exercises where short term contracted staff would be brought in (such as the requirement for data verification and a separate maintenance history report for each site that has already occurred). There is also a provision for legal costs included.
Government-owned meters: accuracy testing initial	WaterNSW proposed accuracy testing a 10% sample size each year of the meters made compliant.	Cardno suggests that the unit price for each meter tested is based on the meter being sent for lab verification. Cardno suggests a lower cost option available to test the meters in situ. Saving approximately $2,300 per test. Also WaterNSW's forecasts appears to include non-	All accuracy testing is to be conducted in situ rather than in the more costly lab-based tests. Wet Testing is quoted at $9,000 a site (six providers requested), not $500 per test. WaterNSW is testing the sample set of between 3% and 10% of meters as per the National Measurement Institution suggested sample rate.

Issue or assumption	WaterNSW submission	IPART / Cardno draft report	WaterNSW response
		pattern approved meters to be replaced likely causing over estimation.	We have excluded the non-Pattern Approval meters. The 10% is not on the fleet number but on the 'families of meters'. So 10% of Siemens, 10% of ABB, 10% of EuroMags, etc. the Families of meters are taken from the NMI Pattern Approved Meters list then taking 10% of that family of meters we had in our fleet.
Government-owned meters: accuracy testing ongoing	WaterNSW ongoing testing allowance set at $500 average cost per test for 5% of compliant meters. Based on the assumption that the initial 10% sample has been tested for compliance program.	Cardno states that WaterNSW does not conform to the NSW policy. No annual testing is required by the NSW policy, instead requirements include rolling 5 year DQP validations	While WaterNSW confirms that meter testing is not mandated under policy or regulation, it believes testing is appropriate to enable a fleet-based approach and to avoid extracting the 1,548 meters to prove they are compliant. The fleet-based approach ensures the fleet is maintained and still accurate. In the absence of the fleet based approach and testing as proposed, WaterNSW would not be able to ensure compliance without excavating 1,548 sites each time a validation is required at a cost of ~$7.7 Million.
Government-owned meters: rectification of damaged meters	A significant number of the transferred meters from the Hawkesbury Nepean region need rectification to ensure they can be validated as part compliance to reforms. This has an estimated cost of $2,330 per site. The cost model has 7.8% total meters requiring rectification per year.	The basis of costing in the model is $1,730 for LID and $500 for the site visit is incorrect (confirmed by WaterNSW). The basis for unit cost and number of meters requiring rectification (7.8%) is not known.	A site assessment program was run in 2019 to look at the 826 meters in HNBB region. Of the 550 reviewed, 99 meters were deemed to be operational. The remaining 451 were non operational for a variety of reasons. Of these 550 meters, most need some form of rectification works to bring the sites up to standard ready for validation and new LIDs installed. The other 276 meters were not reviewed.

APPENDIX B: Extract of risk register

The following extract provides an example of risk 1 of 33 within the risk register.

Risk No		**1**					
Risk nature		**Program**					
Category		**Project**					
Sub-Category		**Schedule**					
Risk/ Hazardous Event & Description		**Rollout schedule delayed** Annual Telemetry rollout targets are not achieved					
Causes		Insufficient DQPs in the market to undertake installation		Summer 19-20 bush fires damaged works and they now need remedial work before they can be made compliant	Inability to access required equipment due to supply interruptions i.e. Covid back logs / delaying supply	Shortage of suitable trained / qualified employees	Customer sites are not accessible (e.g. access constraints, prolonged adverse weather conditions)
Consequence		Reputational impact - Rollout delayed - WNSW seen as poor project managers, can't deliver on time and within budget	Financial impact - Increased costs associated with limited supply of DQPs undertaking installs	Customer impacts - service provision is impacted and customers' ability to comply with new regulations within required timeframes	Customer impacts - service provision is impacted and customers' ability to comply with new regulations within required timeframes	Customer impacts - service provision is impacted and customers' ability to comply with new regulations within required timeframes	Customer impacts - customer appointments need to be made or remade. Service provision is impacted and customers' ability to comply with new regulations within required timeframes
Risk Owner		**Redacted**					
Business Unit		**Redacted**					
Inherent Risk	Consequence Category	Reputation	Financial	Customer			
	Consequence	Moderate	Moderate	Moderate			
	Likelihood	Likely	Possible	Possible			
	Risk Rating	High	Medium	Medium			
Cumulative Inherent risk rating		High					

Controls		Partnering with DPIE to ensure consistent messaging and constant reviewing of delivery dates at DPE/NRAR/ WNSWS steer co	For government-owned meters - using long term contracts to fix price going forward WNSW CFOs are all qualified DQPs - if required they can be engaged to perform DQP duties	NRAR - Pathway to compliance allows customers leeway to become compliant past the rollout date as long as they can demonstrate they have done all they can to become compliant. Monthly numbers review sessions between WNSW, NRAR and DPIE
Control Effectiveness		4 - Satisfactory	4 - Satisfactory	4 - Satisfactory
Resid Risk	**Consequence**	Moderate	Moderate	Moderate
	Likelihood	Possible	Unlikely	Unlikely
	Risk Rating	Medium	Medium	Medium
Cumulative Residual risk rating		Medium		
ALARP Status		YES - ALARP (no further action required)		

APPENDIX C: Metering scheme management sensitivity analysis

WaterNSW has undertaken extensive sensitivity analysis to assess alternative assumptions and how these might impact on costs. WaterNSW has included sensitivities for a range of key variables incorporated. The two sensitivities represent a 10% and 20% reduction on the base case assumption. WaterNSW has not included sensitivities that present an increase on the base case assumptions on the basis that we have the potential to unlock and deliver efficiency savings and therefore not expose customers to downside risk.

WaterNSW aims to ensure the integrity of implementation processes to achieve NSW Government's policy objectives and support customers in meeting their obligations and minimise the risk of non-compliance, therefore when weighing the sensitivities and cost assumptions, it should be noted that a consequence of the lowest cost assumptions may be reduced service outcomes for customers or increased risk.

The assumptions supporting Model 1 represent the 'base case'

Flagged issue / assumption	Base case	10% sensitivity on base case	20% sensitivity on base case	Definition (if required)	Reasoning for the selection of sensitivities used in Model 1
Travel time					
Journey time between pump sites	1 hour	0.9 hours	0.8 hours	The average journey time between each meter site. This is significantly impacted by the location of staff, the location of pump sites, the ease of getting to the pump site from the highway, any gates to open and close. Travel speeds are significantly lower on farm and this time also includes the initial site safety inspection. This includes travel toand from the pump site This assumption represents the journey from meter to meter recognising that some meters can be difficult to access (e.g. weather and rough terrain).	WaterNSW considers 1 hour to be a reasonable assumption based on a review of available site location data. 1 hour represents an average journey time between pump sites, with some sites taking up to 4-5 hours to access.
Initial site inspection					
Average download time when meter master data correct	0.8 hours	0.7 hours	0.6 hours	The time taken to download the data from a data logger the first time a CFO visits a site when the meter master data provided via the DQP portal is correct and accurate. The data needs to be verified at site. Seal numbers also need to be verified and if incorrect, noted and reported to NRAR	While there is no explicit requirement to undertake this task, WaterNSW considers this an important activity to avoid future data and compliance issues. WaterNSW has not previously undertaken this activity to this extent in the field and therefore no data exists as to the average time required to undertake this activity.

Flagged issue / assumption	Base case	10% sensitivity on base case	20% sensitivity on base case	Definition (if required)	Reasoning for the selection of sensitivities used in Model 1
					However, due to a telemetry fail, WaterNSW visited 83 sites. At 4 of these sites the data in the onsite data logger was downloaded (as this was one diagnostic option) – the average time to download 12 months of data was about 60 minutes, however this is using old technology and equipment. The base case has been developed based on recent discussions with LID manufactuers and the workflow for this activity which includes a meter equipment safety check, cutting the security seal, unscreweing and opening the device, accessing the portal, downloading the data, resealing the LID and attaching a new security seal. We note that Cardno acknloweldged that: "Although there is this degree of duplication of work that should have already been completed (and paid for by the water user), we consider that it is not unreasonable that WaterNSW undertakes an inspection of the meter in what is essentially year zero"[19].
Average download time when meter master data incorrect	1 hour	0.9 hours	0.8 hours	The time taken to download the data on a data logger the first time a CFO visits a site when the meter master data provided via the DQP portal is incorrect or missing. The correct data has to be collected and saved. Seal numbers also need to be verified and if incorrect, noted and reported to NRAR.	As above - with an additional time allowance given meter master data is incorrect.
Ongoing site visits					
Annual site visit	0.5 hours	0.45 hours	0.4 hours	The time taken to not only download the data from a data logger on subsequent visits (i.e. any visit after the first) but to also undertake all activities to ensure safety and compliance to the regulations. Seal numbers also need to be verified and if	This includes the additional workflow activity of a meter equipment safety check, cutting the security seal, unscrewing and opening the device, accessing the portal, downloading the data, resealing the LID and attaching a new security seal

[19] Cardno, Review of WaterNSW's Metering Reform Costs, Draft Report, March 2021, p. 20

Flagged issue / assumption	Base case	10% sensitivity on base case	20% sensitivity on base case	Definition (if required)	Reasoning for the selection of sensitivities used in Model 1
				incorrect, noted and reported to NRAR	
Processing data					
Percent of data submissions that will be digital/manual	80%/20%	N/A	N/A	The percent of self-reports that will be submitted by customers digitally/manually.	Currently, 77% of water order submissions are done via iWAS and the remaining 23% are manual. WaterNSW is assuming the proportion of manual submissons will decrease going forward. Based on a a discussion with Cardno (9/4) a 80%/20% base case assumption was considered reasonable.
Percent of meters sampled for accuracy	10%	9%	8%	The number of self reads that WaterNSW will sample for accuracy each year.	While there is no explicit obligation for WaterNSW to sample a percentage of meters, WaterNSW consider this to be a critical activity for managing program risk and to mitigate billing and account management issues. Based on a discussion with Cardno (9/4) the 10% the base case assumption was considered reasonable.
Time to sample a meter	0.25 hours	0.23 hours	0.2 hours		Based on a a discussion with Cardno (9/4) the base case assumption was deemed not unreasonable.
Time to perform an estimated read on a meter	0.25 hours	0.23 hours	0.2 hours	In the absence of self-reporting, the time it will take to estimate usage for the purposes of accurate account management and billing.	Based on a a discussion with Cardno (9/4) the base case assumption was deemed not unreasonable.
Time assisting customers register for the digital platform	0.25 hours	0.23 hours	0.2hours	Assisting customers enrol and log in to the WaterNSW online self-reporting portal.	Based on a a discussion with Cardno (9/4) the base case assumption was deemed not unreasonable.

APPENDIX D: Pricing reference points

Appendix D shows broadly equivalent charges from other organisations across various jurisdictions. The charges presented in Tables D.1 and D.2 are within a similar order of magnitude to those proposed by WaterNSW.

The average irrigation charge per connection type is $2,414 in Murrumbidgee for Irrigatoin Corporation Districts this compares to $1,178 under model 1 and $1,269 under the supplementary proposal submitted by WaterNSW (excluding the capital charge).

Table D.1: Outlet charges per connection type

Connection Type	Murrumbidgee Irrigation	Murray Irrigation	Coleambally Irrigation	Notes:
Low Flow Meter	$1,591	-	-	Outlet charges for cost recovery of annual maintenance and operational costs
Small Meter	$1,840	$687.81	$229	
Medium Meter	$2,002	-	$573	
Medium Large Meter	$2,460	-	-	
Large Meter	$2,842	$914.69	$854	
Extra Large Meter	$3,190	-	-	
Custom Meter	$3,654	$1,218.22	$917	
Meter Only	$1,732	-	-	

Source: Murrumbidgee Irrigation; Coleambally Irrigation; Murray Irrigation

Table D.2 shows the remote read to be significantly higher compared to a local read, similar to WaterNSW's initial analysis however a standardised fee has been applied to encourage the uptake of telemetry.

Table D.2: Goulburn-Murray Water - Water Delivery Service Fee by District

Fee/ Charge	Unit	Shepparton, Central Goulburn, Rochester, Loddon Valley, Murray Valley, Torrumbarry
Service Point - Local Read	$/Each	$374
Service Point - Remote Read	$/Each	$749
Service Point - Remote Operate	$/Each	$1,068

Source: Goulburn Murray Water

Installation Capital Cost:

- Goulburn Murray Water Meter Action Plan - $15,000 average upgrade/replacement cost per meter[20]
- Murray irrigation annual fee – $15,000 for installation of new compliant meter[21]

The installation capital costs referenced above are comparable to the $5,611 capital cost per meter proposed by WaterNSW[22].

[20] Table 11; https://www.g-mwater.com.au/downloads/gmw/Water_Resources/20201218_Meter_Action_Plan.pdf

[21] To install complaint installation to ATS 4747 https://www.murrayirrigation.com.au/wp-content/uploads/2019/08/3254314_3_19.08.16-Murray-Irrigation-Limited-Annexure-A-released-190819.pdf

[22] $14.6 million capex divided by 2,604 meters.

APPENDIX E: Price outcomes under Model 3

The table below presents the telemetry/non-telemetry and scheme management charge outcomes under the costs and volumes in the Model 3 scenario.

Table E.1: Meter reform service charges

	FY22	FY23	FY24	FY25	Smoothed
Telemetry / non-telemetry (per meter installation)					
Initial proposal	$454.15	$346.78	$337.16	$319.25	$345.04
Model 3	$326.85	$242.85	$214.06	$201.20	$230.14
Variance (%)	-28%	-30%	-37%	-37%	-33%
Scheme management charge (per licence)					
Initial proposal	$48.67	$72.02	$93.83	$95.01	$76.59
Model 3	$44.79	$61.91	$75.48	$71.98	$63.07
Variance (%)	-8%	-14%	-20%	-24%	-18%

Corresponding bill impact outcomes are shown below.

Table E.2: Bill impact for government-owned meters transition scheme (total bill)

	FY19 bill (Actual median bill for GW/UNREG), (Representative bill for REG)	Incremental cost of capital charge and updated MSC	Total cost with meter costs	%increase
Representative Reg bill (Murrumbidgee)*	$2,282.09	$1,215.30**	$3,497.39	53%
Representative Reg bill (Murray)*	$2,765.59	$1,215.30**	$3,980.89	44%
Median unregulated bill	$701.52	$1,211.66***	$1,913.18	173%
Median groundwater bill	$2,824.68	$1,211.66***	$4,036.34	43%

Source: WaterNSW analysis
*Assumes GS licence holder with 250ML of entitlements and 60% utilisation. Includes MDBA charges.
** $1,754.89 annual charge per Govt owned meter minus average of existing Rural Valley MSC of $539.59.per annum
***$1,754.89 annual charge per Govt owned meter minus average of existing WAMC MSC of $543.23.per annum

Table E.3: Bill impact for government-owned meters transition scheme (regulated customers)

Meter size	$2019-20 MSC	Total cost of scheme **	Variance (%)
50mm	$466.00	$1,754.89	277%
80mm	$468.17	$1,754.89	275%
100mm	$468.16	$1,754.89	275%
150mm	$473.66	$1,754.89	270%
200mm	$476.38	$1,754.89	268%
250mm	$478.90	$1,754.89	266%
300mm	$485.41	$1,754.89	262%
350mm	$514.65	$1,754.89	241%
400mm	$532.06	$1,754.89	230%
450mm	$535.41	$1,754.89	228%
500mm	$549.68	$1,754.89	219%
600mm	$567.95	$1,754.89	209%
700mm	$589.67	$1,754.89	198%
750mm	$620.08	$1,754.89	183%
800mm	$640.63	$1,754.89	174%
900mm	$647.13	$1,754.89	171%
1,000mm	$659.16	$1,754.89	166%
Channel*	$6,107.36	$9,985.77	64%

Source: WaterNSW analysis
*There are no patent approved channel meters. Total cost of scheme includes the meter service charge and capital charge ($601). There are approximately 15 users impacted by the Channel meter charge.
**$1,754.89 per annum is the total cost of the scheme i.e. includes the meter service charge and capital charge. This differs from the incremental cost presented in Table E.2 (e.g. minus the average cost of the existing meter service charge).

Table E.4: Bill impact for government-owned meters transition scheme (telemetered sites in unregulated and groundwater)

Meter size	$2019-20 MSC	Including cost of scheme*	Variance (%)
50-300mm	$514.31	$1,754.89	241%
350-700mm	$534.41	$1,754.89	228%
750-1000mm	$580.97	$1,754.89	202%

Source: WaterNSW analysis
*$1,754.89 per annum is the total cost of the scheme i.e. includes the meter service charge and capital charge. This differs from the incremental cost presented in Table E.2 (e.g. minus the average cost of the existing meter service charge).

Table E.5: Bill impact for government-owned meters transition scheme (Non-telemetered sites in unregulated and groundwater)

Meter size	$2019-20 MSC	Including cost of scheme*	Variance (%)
50-300mm	$403.47	$1,754.89	335%
350-700mm	$419.24	$1,754.89	319%
750-1000mm	$455.77	$1,754.89	285%

Source: WaterNSW analysis
*$1,754.89 per annum is the total cost of the scheme i.e. includes the meter service charge and capital charge. This differs from the incremental cost presented in Table E.2 (e.g. minus the average cost of the existing meter service charge).

APPENDIX F: Legislative considerations

This attachment addresses the following matters:

- Whether metering is a monopoly service;
- Contextual information in relation to the relevant legislation;
- There should be a greater focus on the costs of legislative and regulatory obligations;
- Forecasts for compliant meters has been agreed to by the MDBA Jurisdictions; and
- Comments which are inconsistent with the National Water Initiative.

Background

WaterNSW observes that IPART has not proposed draft prices for the cost of non-urban metering reform. In addition, Cardno, in its report on the cost of non-urban metering, has not reached a conclusion on efficient costs in line with the Cardno scope of works.

WaterNSW's view is that IPART should have further regard to the requirements of IPART's ACCC Accreditation, the ACCC Pricing Principles, the Basin water charging objectives and principles of the IPART Act. This includes the legislative, and regulatory obligations applicable to WaterNSW and the mandatory nature of the obligations described in our submission and our responses to the Requests for Information raised during the efficiency review.

WaterNSW's non-urban metering expenditure plan was developed in accordance with the agreed scope of works, the IPART Guidelines and the WCR/ACCC Pricing Principles and we are continuing to work with IPART and its consultant to close any remaining information gaps so that Cardno can reach a view on the prudent and efficient cost costs of implementing the NSW Government's non-urban metering reform.

WaterNSW would like to avoid being left in a position where it is unfunded to meet its regulatory obligations, which may leave WaterNSW unable to meet its financeability criteria and a standalone investment grade credit rating.

Is metering a monopoly service?

WaterNSW considers that the activities of water data management, including the collection of user data and meter reading or water take activities (e.g. electronic and physical) are declared to be monopoly services. These activities are not only linked to the non-urban metering policy, but are also required for the administration of the NSW Government's water management and planning laws and regulations.

These activities are also supported by the requirements in the WaterNSW operating licence. For example, including but not limited to the requirement to operate the DAS and DQP, the requirement to account for water, and the requirement to manage the accuracy of take to billing, account management and reporting.

With respect to government-owned meters, WaterNSW considers these assets/services to be declared as monopoly services under the IPART framework (e.g. Unregulated Rivers and Groundwater Sources). We also consider these assets/services to be regulated under the ACCC Framework (e.g. Regulated Rivers).

We note the following precedents:

- In 2014, the ACCC considered that metering services for regulated customers were provided in relation to water service infrastructure and were therefore regulated under the ACCC pricing rules.[23]
- Metering services for groundwater and unregulated customers are subject to the IPART pricing framework. The WAMC determination established a meter service charge to recover the operating cost of maintaining Government owned groundwater and unregulated meters.
- There is a precedent for setting capital charges for metering services and activities: In relation to regulated customers, in the ACCC 2014 Determination, the ACCC approved a meter service charge to recover both the operating and capital cost of installing and operating government-owned meters on customer extraction sites, where the cost was not offset by Commonwealth grant funding and where the customer decided to use a Government owned meter.[24].

WaterNSW would be pleased to assist IPART in its consideration as to whether metering services are monopoly services.

Contextual information in relation to the relevant legislation

In relation to the Rural Valley Determination that does not include approved metering charges, WaterNSW considers that IPART should consider the requirements of the ACCC Pricing Principles, the Water Charge Rules (WCR) 2010 and the ACCC Terms of Accreditation.

Under the ACCC accreditation of IPART, IPART is required to observe the following:

> *(a) […]that the applied provisions apply as a law of the State and are in force;*
>
> *(b) […]that the approval or determination of regulated charges of all Part 6 operators and Part 7 operators relating to State water resources of that State must be carried out by the accredited agency in accordance with the accredited arrangements and the applied provisions.*
>
> Note: the applied provisions refer to the Rules

The ACCC imposed two additional conditions under the terms of accreditation. The first additional condition requires that **IPART must apply the ACCC Pricing Principles** in making determinations or approvals under the Water Charge Infrastructure Rules (WCIR).

Consistent with regulatory best practice, IPART is required to consider any regulatory requirements imposed upon the regulated entity. These requirements are set out in the ACCC Pricing Principles for MDB Valleys, which are legally binding on IPART. Similar guidance is set out in the IPART Water Agency Guidelines.

The ACCC Pricing Principles state that:[25]

> *A regulator must not approve the regulated charges set out in a pricing application unless the regulatory is satisfied that the total forecast revenue used to calculate those charges for each year of the regulatory period recovers the prudent and efficient costs of providing infrastructure services, including costs incurred in complying with regulatory obligations and requirements.*

In addition, Section 15 of the IPART Act states that IPART must consider the standards for quality, reliability and safety of the monopoly services in setting prices. According to the 2018

[23] ACCC, Final Decision on State Water Pricing application 2014-15 to 2016-17, p. 24
[24] Attachment to ACCC Final decision on State Water pricing application 2014-15 to 2016-17, p. 134
[21] ACCC, Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010, July 2011, p. 40

IPART Pricing Guidelines, those standards may be specified by legislation, agreement or otherwise.

In the WCR, the Regulator must not approve regulated charges unless it is satisfied that the total forecast revenue is reasonably likely to meet the prudent and efficient cost within the regulatory period.

In addition, IPART is required to set prices that contribute to achieving the Basin water charging objectives and principles contained in Schedule 2 of the *Commonwealth Water Act*.

These objectives include to promote the economically efficient and sustainable use of water infrastructure and to ensure sufficient revenue streams to allow efficient delivery of the required service. The regulatory impact statement to the Water Infrastructure Rules 2010 states that *Water charge rules that encourage full cost recovery for water services will contribute to achieving an economically efficient and sustainable use of water resources and water.*

It is clear from the Final Report that Cardno has undertaken a considerable level of analysis of WaterNSW's proposed costs and has found many costs to be reasonable. We are continuing to work with IPART and its consultants Cardno to close any remaining information gaps so that Cardno can reach a view on the prudent and efficient cost costs of implementing the NSW Government's non-urban metering reform.

There should be a greater focus on the costs of legislative and regulatory obligations

WaterNSW considers IPART should place more weight on the need to ensure prices include the costs of legislative and regulatory obligations.

As part of the efficiency review, WaterNSW presented a letter from Minister Pavey regarding the Government's position that WaterNSW should maintain ownership of Government Owned Meters. We referred to a *what we heard* report from DPIE regarding proposed changes to the self-reporting requirements and a link to the regulation.[26] We also presented a signed/approved ministerial on changes to the WaterNSW operating licence.

The proposed expenditure is driven by the regulatory requirements in our operating license, the regulations, as well as the requirements of the non-urban metering policy. For example in relation to the DAS and DQP, we note the operating licence contained in clause 6.18 – 6.20.[27] It is a basic requirement to allow the cost implications of the operating licence to be included in a price determination.

IPART's stated objective in the September 2020 Paper on *Water Pricing and Licensing Regulating Water Business Special Review* is to mimic the outcomes of a competitive market.[28] WaterNSW considers that market participants in competitive markets are expected to unquestionably comply with their regulatory requirements.

Forecasts for compliant meters has been agreed to by the MDBA Jurisdictions

In relation to Cardno comment on the roll-out of the non-urban metering reform, we note that the MDBA Compact requires metered coverage to be implemented by June 2025, which is within the term of the WAMC determination. This is not a WaterNSW assumption; the assumption has been formalised by the MDB jurisdictions under the MDBA Compliance Compact.

[26] New reporting rules for metered water users, https://www.industry.nsw.gov.au/water/metering/new-reporting-rules
[27] Water NSW Operating Licence 2017 - 2022 ,p. 23 – 24
[28] IPART, Water Pricing and Licensing Regulating Water Business Special Review, Position Paper, September 2020, p. 9

In December 2018, the Murray Darling Basin Compliance Compact was signed by all MDB Jurisdictions (emphasis added):[29]

> According to the Compact, *the Compact sets priorities for action, and commits the Australian Government and Basin States (the Parties) to work plans that will be reported on regularly and publicly. The Compact provides a comprehensive response to recent and ongoing reviews into compliance and the integrity of Basin water management (Appendix 1), including:*
>
> - *The Murray–Darling Basin Water Compliance Review (the MDB Compliance Review) (November 2017)*
> - ***The interim and final reports of the independent investigation into NSW water management and compliance by Ken Matthews AO (September and November 2017)***
> - *The independent audit of Queensland non-urban water measurement and compliance (March 2018).*
>
> …
> *Basin States are also responsible for regulating water users within their jurisdiction, and enforcing compliance with Basin Plan state water management rules.*
>
> …
> *Actions under the Compact will be implemented in a way that is practical and proportionate to the risk being addressed, with a focus on achieving Basin Plan outcomes in the most effective way, and is consistent with the Council of Australian Governments (COAG) Principles for Best Practice Regulation.*

On Page 7 of the Compact (emphasis added):

> *Consistent with the National Framework for Non-urban Water Metering (2009), all water meters should comply with the national standard (AS4747).* ***Additionally, telemetry should be utilised to improve the timeliness and efficiency of capturing and reporting water take data for compliance, and flag possible breaches of water management rules for immediate investigation.***
>
> …
> *(ii)****Commencing immediately, and until June 2025****:*
>
> *a. All new and replacement meters to comply with AS4747 where available.*
>
> *b. Where an AS4747 compliant meter is not available the use of an interim meter that has been verified with a manufacturer's certificate of accuracy to within +/- 5% is acceptable.*
>
> *(iii) When an existing meter no longer meets +/- 5% accuracy in the field it must be repaired and validated so that it is accurate to within +/- 5% in the field, or replaced (see 3.2(i)).*
> *(iv) All meters to be periodically validated consistent with the requirements of AS4747*

On Page 8 of the Compact (emphasis added):

> *3 Meter coverage:*
> ***(i) All take via water entitlements to be metered by June 2025, and a plan for achieving this.***
> *(ii) Any exemptions to 3.3(i) made by the state to be supported by a justification, such as a regulatory impact assessment, published on the relevant state agency website.*
>
> …

[29] Murray-Darling Basin Compliance Compact, December 2018

> *Transmission of data:*
> ***(i) A program to progressively automate the reporting of water take, regardless of how that is measured, no later than 2025.***
> *(ii) Any exemptions to 3.4(i) made by the state to be supported by a justification published on the relevant state agency website.*
>
> …
> ***The highest risk take, including large users in the Barwon–Darling, to be accurately metered by December 2019 and will publish what constitutes highest risk in their metering policies.***
> *High risk take should also be telemetered by December 2019 with any exemptions published.*

The MDBA Compliance Compact was formed as a direct response to the findings of the Matthews Report. The NSW Government Policy on non-urban metering reform is consistent with the MDBA Compliance Compact, and the policy position envisaged by the MDB Jurisdictions and the NSW Government.

Comments which are inconsistent with the National Water Initiative

On page 39, Cardno recommend that WaterNSW should not receive a return on investment for its infrastructure assets.

> *The WaterNSW submission also means that the NSW Government will receive a return on the capital invested to make the meters compliant from water users with a government-owned meter. This approach does not adopt the principle applied to privately owned meters, that the meter owner must bear the costs.*

WaterNSW disagrees with this recommendation. It suggests that private enterprises would not attempt to pass on the cost of investments to their customers or suppliers.

The comments are inconsistent with the National Water Initiative. Since 1994, State and Commonwealth Governments have agreed to implement full cost recovery for water activities to achieve a sustainable and efficient water sector and to improve the condition of water resources.

In 2010, COAG agreed to the principles for the recovery of capital expenditure contained in the National Water Initiative Pricing Principles, which include requirements related to the recovery of a return on capital.

APPENDIX G: Responses to IPART Questions

The following outlines our response to IPART's specific questions on non-urban metering reform as contained in IPART's draft WAMC and Rural Valleys determinations.

1. Do you consider the indicative scheme proposed costs are affordable and what are the impact of proposed bill increases on licence holders?

WaterNSW is conscious of the impact that the costs of implementing metering reform may hae on customers. However, affordability concerns need to be balanced with the need to ensure customers contribute to the costs of compliance. Water users do have a number of options available to them to minimise the impact of these reforms including making their work(s) inactive. We believe that if a water user makes the decision to invest in either making their existing meter compliant or installing a new meter, WaterNSW's proposed costs would be relatively small in comparison.

For MDB valleys, it should also be noted that IPART is required to set prices according to the Water Charge Rules 2010. As quoted by IPART in the 2021 Rural Valley Draft Determination, *this means we must set prices that are likely to recover the efficient costs of delivery services, and have no flexibility to set lower prices for affordability reasons*.

In the 2021 Rural Valley Draft Determination, IPART assessed the reasonableness of its draft prices (proposing increase of up to 30% to 70%) considering:

- Bills for comparable services in other jurisdiction;
- The impact on farming businesses' gross value irrigated agriculture product; and
- The market value of entitlements.

IPART concluded that its draft prices (proposing increase of up to 30% to 70%) are reasonable.

We note that affordability concerns could also be addressed through setting alternative tariff structures to recover the costs. For example, costs could be recovered on a per entitlement basis to ensure price increases are allocated proportionately across the customer base.

2. Will Water NSW's proposal result in a consolidation of entitlements and fewer licence

The current charges for WAMC and bulk water services (excluding the costs of non-urban metering reform) represents the most significant driver of government charges for most customers even if the costs of non-urban metering reform is factored into the total bill.

IPART's own analysis on the impact of its rural valley draft prices concludes that government charges contribute to approximately 3-9% of the costs of farming. Commodity prices also contribute to the ability of the business to defray the costs of government charges and other business costs such as plant and equipment and interest charged on commercial loans.

Therefore, customers may decide to consolidate their entitlements or hand in their entitlements (although entitlements are more likely to be permanently traded in the market), however it would be difficult to attribute the cause to any particular driver.

IPART questioned the potential for broader changes in customer behaviour such as consolidation of entitlements, down-sizing meters and/or the trade of water out of NSW as a result of the proposed metering charges. WaterNSW does not expect these changes to be material given historical trends, practicality issues with downsizing/consolidating and the small percentage of total costs that the licence charge per annum represents.]

3. Will the metering policy result in some water users downsizing their works to avoid the 100mm meter threshold for the new policy

As per our response to the question above, there are many factors that may influence a customer's decision to downgrade their works however it would be difficult to attribute the cause to any particular driver. Downsizing works has a number of complications that water users need to be aware of, which may influence their decision.

4. What are the impacts, if any, on customers and Water NSW if customers with government owned meters choose the opt-out option?

Customers will be responsible for ensuring compliance with the Government's non-urban metering policy. It is expected that customers would incur the costs of installing a user meter which complies with the measurement standards as well as the ongoing costs of maintenance in line with the asset management standards. These could be quite significant depending on individual circumstances.

5. If there are other providers who can provide the service, would there be an economic case to not set a regulated price for the MSC?

WaterNSW considers that the activities of water data management, including the collection of user data and meter reading or water take activities (e.g. electronic and physical) are declared to be monopoly services. These activities are not only linked to the non-urban metering policy, but are also required for the administration of the NSW Government's water management and planning laws and regulations.

These activities are also supported by the requirements in the WaterNSW operating licence. For example, including but not limited to the requirement to operate the DAS and DQP, the requirement to account for water, and the requirement to manage the accuracy of take to billing, account management and reporting.

With respect to government-owned meters, WaterNSW considers these assets/services to be declared as a monopoly service under the IPART framework (e.g. Unregulated Rivers and Groundwater Sources). We also consider these assets/services to be regulated under the ACCC Framework (e.g. Regulated Rivers).

We note the following precedents:

- In 2014, the ACCC considered that metering services for regulated customers were provided in relation to water service infrastructure and where therefore regulated under the ACCC pricing rules.[30]
- Metering services for groundwater and unregulated customers are subject to the IPART pricing framework. The WAMC determination established a meter service charge to recover the operating cost of maintaining government-owned groundwater and unregulated meters.
- There is a precedent for setting capital charges for metering services and activities: in relation to regulated customers, in the ACCC 2014 Determination, the ACCC approved a meter service charge to recover both the operating and capital cost of installing and operating government-owned meters on customer extraction sites, where the cost was not offset by Commonwealth grant funding and where the customer decided to use a government-owned meter.[31]

WaterNSW would be pleased to assist IPART in its consideration as to whether metering services are monopoly services.

[30] ACCC, Final Decision on State Water Pricing application 2014-15 to 2016-17, p. 24
[31] Attachment to ACCC Final decision on State Water pricing application 2014-15 to 2016-17, p. 134

6. If you have decided or are deciding to opt out of the government owned scheme and own your own meter, please tell us the reasons why you switched or are considering switching.

No comment.

7. If we do set a regulated maximum price for metering where there are alternative providers, what should we consider to ensure we support efficient outcomes in these situations?

From WaterNSW's perspective, it is important for IPART to set prices that recover the costs of providing the service as per our submission.

Prices should not be set at artificially low levels (e.g. below cost reflective levels) so as to undercut the competition and stymie market innovation. Prices should consider the true cost and risk of a benchmark efficient firm in providing the service (regular maintenance, repair and equipment replacement for one annual price, no variations).

8. What would be the implication for customers, water users and Water NSW if we don't set a regulated price for the MSC for government owned meters?

From WaterNSW's perspective, it would be inconsistent with regulatory precedent not to set a price for government-owned meters. There is significant regulatory risk on WaterNSW if IPART decides to reverse its decision at the 2025 price review.

As mentioned previously, we note the following precedents:

- In 2014, the ACCC considered that metering services for regulated customers were provided in relation to water service infrastructure and where therefore regulated under the ACCC pricing rules.[32]
- Metering services for groundwater and unregulated customers are subject to the IPART pricing framework. The WAMC determination established a meter service charge to recover the operating cost of maintaining Government owned groundwater and unregulated meters.
- There is a precedent for setting capital charges for metering services and activities: in relation to regulated customers, in the ACCC 2014 Determination, the ACCC approved a meter service charge to recover both the operating and capital cost of installing and operating government-owned meters on customer extraction sites, where the cost was not offset by Commonwealth grant funding and where the customer decided to use a Government owned meter.[33]

If water users who have a Government owned meter are not aware of the true costs of maintaining these meters, it could expose them to higher prices, especially in areas where there may be limited alternatives to provide the service. If they are either not aware of their ongoing maintenance obligations or fail to undertake the ongoing maintenance, they could be subject to compliance action from NRAR as well as higher costs from WaterNSW in the case of any equipment failure.

WaterNSW may incur higher costs as the continuity of work may not allow it to price and plan an effective and efficient planned maintenance program, rather providing a reactive service. Under this scenario, DQPs that WaterNSW had planned to engage to undertake this activity may source work elsewhere resulting in a reduction in services and ultimately higher prices.

[32] ACCC, Final Decision on State Water Pricing application 2014-15 to 2016-17, p 24
[33] Attachment to ACCC Final decision on State Water pricing application 2014-15 to 2016-17, p, 24

9. What are your views on Water NSW's proposed costs and our initial assessment of these costs?

This is a comment directed to the customer. No comment.

10. Should scheme management charges for non-urban metering reform apply on a per licence basis (as proposed by Water NSW)?

As documented in our cost proposal, the per licence charging arrangement was considered appropriate to ensure customers that use the service pay for the service.

Affordability concerns could be addressed through setting alternative tariff structures to recover the costs. For example, costs could be recovered on a per entitlement basis to ensure price increases are allocated proportionately across to the customer base.

11. Should the costs associated with installing telemetry and non-telemetry meters be the same?

When WaterNSW assessed the costs for telemetry services, we noted the incremental costs of telemetry were higher than the costs of non-telemetry due to the lack of volume on the uptake of telemetry in the short term.

We equalised the telemetry and non-telemetry charge by rebating the cost reflective telemetry charge.
The arrangement of equalising the charges provides an incentive for customers to install telemetry or there are incentives in the market to motivate water users to install telemetry.

Over time, we expect the cost of non-telemetry will exceed the cost of telemetry if there is sufficient (mandatory and voluntary) uptake of telemetry.

We consider this arrangement to be consistent with the outcomes of a competitive market environment.

12. If we were to set new metering charges, how should we transition between the existing charges to the new charges?

WaterNSW is proposing to levy the telemetry and non-telemetry charge and the new meter service charge when the complaint meter is installed. As such, we are proposing to transition to the new charges when the compliant meter is installed.

There are several benefits to this approach. For example:

- Costs are only recovered in relation to meters that are actually installed; and
- Metering costs are recovered transparently, from the user that is subject to metering

13. Do you consider WaterNSW's proposal will effectively achieve the Government's policy objectives for metering reform?

WaterNSW's proposal is designed to achieve the Government's policy objectives in relation to the non-urban metering reform.

As noted in our submission, we worked closely with DPIE and NRAR to ensure our proposal was consistent with, and cost effectively meets, the objectives of the Government's non-urban metering reform.

WaterNSW's proposal is also designed to assist water users through their compliance journey, as water compliance to the reforms is a key outcome.