IPART

Independent Pricing and Regulatory Tribunal
New South Wales

Review of water utility performance indicators

Issues Paper
Water

February 2018

ISBN 978-1-76049-177-2

The Independent Pricing and Regulatory Tribunal (IPART)

IPART provides independent regulatory decisions and advice to protect the ongoing interests of the consumers, taxpayers and citizens of NSW. IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from IPART's website: https://www.ipart.nsw.gov.au/Home.

Tribunal Members

The Tribunal members for this review are:

Dr Peter J Boxall AO, Chair

Mr Ed Willett

Ms Deborah Cope

Enquiries regarding this document should be directed to a staff member:

Erin Cini	(02) 9113 7778
Javier Canon	(02) 9113 7761

Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

Submissions are due by 13 March 2018

We would prefer to receive them electronically via our online submission form <www.ipart.nsw.gov.au/Home/Consumer_Information/Lodge_a_submission>.

You can also send comments by mail to:

Water Utility Performance Indicators Review
Independent Pricing and Regulatory Tribunal
PO Box K35
Haymarket Post Shop NSW 1240

Late submissions may not be accepted at the discretion of the Tribunal. Our normal practice is to make submissions publicly available on our website <www.ipart.nsw.gov.au> as soon as possible after the closing date for submissions. If you wish to view copies of submissions but do not have access to the website, you can make alternative arrangements by telephoning one of the staff members listed on the previous page.

We may choose not to publish a submission - for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. However, it could be disclosed under the *Government Information (Public Access) Act 2009* (NSW) or the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW), or where otherwise required by law.

If you would like further information on making a submission, IPART's submission policy is available on our website.

Page intentionally left blank

Contents

1 Introduction

The Independent Pricing and Regulatory Tribunal of NSW (IPART) is reviewing the performance indicators we collect from the public water utilities (PWUs) and the *Water Industry Competition Act 2006* (WIC Act) licensees that we regulate. As part of the licensing regimes we administer, these water utilities' licences require them to collect data on IPART performance indicators and report periodically in accordance with their relevant reporting manuals.

Performance indicators can be a useful tool to monitor or assess a utility's performance and analyse performance trends. We publish data collected from the IPART performance indicators on our website annually.

We collect performance indicators for water utilities on water quality, water quantity, assets and their performance, the environment and customer service. We use our performance indicators in addition to our compliance monitoring framework, to monitor the performance of the water utilities we regulate. The IPART performance indicators are collected in addition to the National Water Initiative (NWI) indicators[1] and other information.

This paper explains the context and purpose of the review, outlines our proposed approach and discusses key issues where we are seeking stakeholder comment.

1.1 Why are we conducting this review?

We are reviewing our performance indicators to ensure that the information we collect is useful and that we are not imposing unnecessary regulatory costs. This means that the benefits derived from requiring water utilities to report on performance indicators should outweigh the costs of collection and reporting.

Currently we do not use all of the performance indicator information we collect to analyse water utilities' performance and we are unsure of the extent to which the general public or other entities use the performance indicators information.

We are also interested in understanding stakeholder views on the performance indicators they would find useful, the benefits and costs associated with them and our approach to collection.

We last reviewed the PWU performance indicators in 2012, and we have not reviewed the WIC Act performance indicators since we first created them in 2009. We have five different sets of IPART performance indicators, one for each of the three PWUs and one each for the two types of WIC Act licences (network operator and retail supplier) we administer. We consider it is appropriate to review both our PWU and the WIC Act licensee performance indicators at the same time.

1 NWI indicator information is collected from Australian water utilities annually by the Bureau of Meteorology, we have a role in coordinating the data from the water utilities we regulate.

1.2 Who does this review affect?

We collect performance indicators information from the following water utilities:

- Hunter Water Corporation (Hunter Water)
- Sydney Water Corporation (Sydney Water)
- WaterNSW
- WIC Act network operators, and
- WIC Act retail suppliers.

If, as a result of our review, the list of IPART performance indicators changes, we would amend the following reporting manuals accordingly:

- Hunter Water Reporting Manual
- Sydney Water Reporting Manual
- Water NSW Reporting Manual
- Network Operator's Reporting Manual, and
- Retail Supplier's Reporting Manual.

In addition to our role in administering the licences of water utilities, we have a price regulation role for some water utilities. The scope of this review does not include the indicators we collect to inform our price regulation role.

1.3 How will we approach the review?

In undertaking this review we consider it important to identify clear outcomes, understand the justification for performance standards and any performance indicators, and to clearly define a role for IPART in relation to performance indicators. We propose that any IPART performance indicators should align with the intended outcome set by the legislative framework and water utility licences, provide greater benefits than costs in monitoring the indicator and not currently be collected through other mechanisms.

We have developed a set of assessment criteria to provide guidance when considering which performance indicators to apply. The use of assessment criteria helps to ensure that decisions are clear, consistent and transparent.

We will be applying a first principles approach, and propose to use these assessment criteria for discretionary indicators that our assessment suggests are potentially necessary. We do not propose to apply these assessment criteria to indicators that are explicitly stated in or required by legislative instruments.

The proposed assessment criteria for the inclusion (or exclusion) of performance indicators are set out in Figure 1.1.

Figure 1.1 Criteria for the assessment of performance indicators

Question

1 Do stakeholders agree with the proposed assessment criteria for the review?

1.4 How will we conduct the review?

To inform our review, we propose to conduct targeted stakeholder and public consultation as well as undertake research and analysis. This Issues Paper is the first step in our review process. It sets out key issues for the review and our preliminary views, and seeks comments from stakeholders.

We are seeking input from water utilities and users of the IPART performance indicators information we currently collect and publish. We invite interested parties to make written submissions in response to this paper by 13 March 2018. Information on how to make a submission is on page iii at the front of this paper.

We will continue to consult with stakeholders throughout the review and propose to:

- release a Draft Report with attached Draft Reporting Manuals that explains our draft decisions and invites further stakeholder submissions
- hold roundtable discussions with water utilities and interested stakeholders, and
- consider all stakeholder feedback and undertake further analysis before making our final decisions and releasing revised reporting manuals.

Table 1.1 provides an indicative timetable for our review.

Table 1.1 Indicative review timetable

Date	Actions proposed
12 February 2018	Issues Paper released and review formally started
Early March 2018	Roundtable discussions with stakeholders
13 March 2018	Submissions due to Issues Paper
April 2018	Release Draft Report and Draft Reporting Manuals
May 2018	Submissions due to Draft Report
June 2018	Release Final Reporting Manuals
1 July 2018	New performance indicators commence

1.5 When will the new IPART performance indicators commence?

Our revised Reporting Manuals, including IPART performance indicators will apply on 1 July 2018.

As part of the review we will consider whether any of the IPART performance indicators require a longer period to commence.

1.6 How is this paper structured?

The remainder of this Issues Paper is structured as follows:

- **Chapter 2** outlines the context of our review, including an overview of performance indicators, and legislative framework underpinning the collection of performance indicators by PWUs and WIC Act licensees.
- **Chapter 3** outlines our approach to monitoring the performance of water utilities.
- **Chapter 4** identifies and discusses outcomes and performance indicators relating to water quality and quantity.
- **Chapter 5** identifies and discusses outcomes and performance indicators relating to assets.
- **Chapter 6** identifies and discusses outcomes and performance indicators relating to the environment.
- **Chapter 7** identifies and discusses outcomes and performance indicators relating to customers.
- **Chapter 8** indicates some of the other work that is related to, but not part of, this review.

1.7 What are we seeking your comment on?

Introduction

Approach to monitoring utility performance

Performance – Water quality and quantity

Performance – Assets

Performance – Environment

Performance – Customers

2 Context of this review

This section outlines the context for our review, including an overview of performance indicators, the legislative frameworks and our role in regulating PWUs and WIC Act licensees.

2.1 What is a performance indicator?

A performance indicator is something that can be simply and reliably used to measure change and assess performance against a goal or target. It represents the direction and type of change required to achieve a desired outcome.

While the use of performance indicators is widespread across government and private sectors, there are some factors to consider so that performance indicators are appropriate and effective. Establishing and capturing performance indicators requires resources. Therefore, the benefits derived from data must outweigh the costs of collection. Performance indicators should also be selected and used carefully to ensure data is aligned and representative of an area of performance or outcome that is desired. This will also help water utilities to collect data efficiently and prevent collecting unnecessary data.

In addition to the difference between compliance monitoring and performance indicators, a further distinction is between lag and lead indicators. Currently the performance indicator information we collect is based on lag indicators. Lag indicators are a historical measure, typically output-oriented and easy to measure, but can be hard to influence.

In contrast, lead indicators are predictive and are typically input-oriented, harder to measure but easier to influence. They generally measure changes associated with the overall outcome sought, and therefore can inform decisions to influence whether that outcome will be met. Because lead indicators measure expected performance, they are most usefully employed by organisations who intend to make proactive decisions or adjustments within a hands-on management approach. Clarity about the outcome sought is an important precursor to effective use of lead indicators.

2.2 PWU licensing and performance indicators

IPART administers the operating licences for Hunter Water, Sydney Water and WaterNSW. The licences set the terms and conditions that each utility is required to meet in order to:

- ensure service quality and reliable supply
- protect customers, and
- assess the impact of the utility on the environment.

We review each licence regularly, at intervals of no longer than five years and we audit each licence annually applying our risk-based compliance framework to determine the appropriate scope of these audits. We publish a Public Water Utility Audit Guideline,[2] and each PWU is required under its licence to comply with a Reporting Manual,[3] which requires is to report annually on water utility performance.

The *Sydney Water Corporation Act 1994* (Sydney Water Act), *Hunter Water Corporation Act 1991* (Hunter Water Act) and *Water NSW Act 2014* (Water NSW Act) require that PWU licences include terms and conditions requiring the utility to meet performance standards, specified in the licence. The Acts specify the issues which may be addressed by performance standards:

- Hunter Water: water quality, service interruptions, price levels and other matters determined by the Governor.[4]
- Sydney Water: water quality, service interruptions, pricing and other matters determined by the Governor.[5]
- WaterNSW: water delivery, water quality, service interruptions or any other matters.[6]

Licence conditions that require a PWU to report against a performance indicator may be introduced for any of these matters.

Under the Sydney Water Act and the Water NSW Act, operating licences must require the utility to compile indicators on the direct impact of their activities on the environment.[7] Sydney Water must use this information to prepare an annual report and facilitate a year-to-year comparison on its environmental performance. A requirement for Sydney Water to report on the environmental performance indicators is specified in the operating licence. Sydney Water publishes an annual Environmental Indicators Report, as part of its Environmental Compliance and Performance Report, on its website.

WaterNSW's environmental indicators provide information on its performance and enable reports to be prepared, but there is no statutory obligation to publish indicators or any reports. WaterNSW's licence and operating manual stipulate that it must report annually to IPART on the environmental performance indicators specified by IPART.[8] The environmental indicators were introduced to the 2017-2022 operating licence and will first be reported for the 2017-18 financial year.

Additionally, the Water NSW Act requires that every three years WaterNSW is audited against a set of catchment health indicators for the Sydney Catchment Area. The 18 catchment health indicators were developed by the former Department of Water and Energy and published in the Government gazette on 19 December 2008.[9] The portfolio Minister tables the audit report in Parliament and WaterNSW must use the results to inform its

2 IPART, *Audit Guideline Public Water Utilities*, May 2016.
3 Hunter Water Operating Licence 2017-2022, cl. 6.2; Sydney Water Operating Licence 2015-2020, cl.8.2; Water NSW Operating Licence 2017-2022, cl. 7.2.
4 *Hunter Water Act 1991*, s 13(1)(c).
5 *Sydney Water Act 1994*, s 14(1)(c).
6 *Water NSW Act 2014*, s 12(2)(a).
7 *Sydney Water Act 1994*, s 14(1)(d); *Water NSW Act 2014*, s 12(2)(b).
8 Water NSW Operating Licence 2017-2022, cl 2.3.1(d).
9 NSW Government Gazette number 158, Friday 19 December 2008.

catchment management programs and activities, and risk framework. We require WaterNSW to report annually to us on the five Catchment Health indicators it collects.

2.3 WIC Act licensing and performance indicators

IPART is responsible for administering the licence regime under the WIC Act. We monitor and assess licensees' compliance with their licence conditions and provide an annual report to the Minister for Energy and Utilities. We identify non-compliances with licence conditions through audits, licensees' self-reporting and our analysis. Our monitoring of licensees' compliance is critical to:

- protect public health, public safety, consumers and the environment, and
- encourage competition in the market by maintaining market confidence and integrity.

The WIC Act does not specify particular performance indicators for the WIC Act licensees. However, the WIC Act allows for the Minister to specify licence conditions in individual licences including for the imposition of licence conditions which would require the licensee to report to IPART against standards and indicators. There are existing conditions in the WIC Act licences that require licensees to outline their (proposed) arrangements in relation to the maintenance, monitoring and reporting of standards of service.

The legislation also imposes reporting obligations, such as the requirement for retail supplier's licensees to provide periodic reports regarding customer complaints to the Minister and IPART.[10]

2.4 Price regulation

IPART is responsible for setting maximum prices for the monopoly services provided by Hunter Water, Sydney Water, WaterNSW and Sydney Desalination Plant Pty Ltd (SDP, which holds licences under the WIC Act).[11] To inform our price regulation role we require the water utilities to provide us with information. This information provided for IPART's price regulation role is currently separate from the information requirements of the PWU and WIC Act licences and reporting manuals.

The IPART Annual Information Return (AIR) collects information from regulated businesses each year. We send the AIR spreadsheets to regulated businesses around the end of August and receive completed AIRs around the end of October each year.

The Special Information Return (SIR) collects additional information for our pricing reviews. We send a SIR to the regulated business November the year before our pricing review starts and the regulated business submits its completed SIR with its pricing proposal in June. Our pricing review begins in July of the same year. The AIR and SIR collect information on financial and non-financial data. This includes but is not limited to:

- price data
- revenue data

10 *Water Industry Competition (General) Regulation 2008* (WIC Regulation), Sch 2, cl 4.

11 IPART is also responsible for setting maximum prices for the monopoly services provided by Central Coast Council, Essential Energy and the Water Administration Ministerial Corporation.

- operating capacity
- number of customers, and
- operating expenditure and capital expenditure data (actual and forecast).

We have commenced our review of the information we require to inform our review of water utility prices. We will be consulting separately with water utilities as we undertake this work.

2.5 Commonwealth requirements for performance indicators

The *Water Act 2007* (Cth) (Water Act) and *Water Regulations 2008* (Cth) (Water Regulations) specify water information which urban water utilities must provide to the Bureau of Meteorology (BOM). The BOM manages, interprets and reports on the information collected. A utility does not have to provide information which the BOM already has from another source. Water information which utilities must provide under the Water Act includes:

- Information or data relating to:
  - the availability, distribution, quantity, quality, use, trading or cost of water, and
  - water access rights, water delivery rights or irrigation rights.
- Any metadata relating to the data above, and contextual information about land use, geological and ecological context.

The Water Regulations specify who should report, and when and how the information should be reported.

- Utilities are classified into categories A-M, with the categories reflecting the scope of the company's operations. Each category has different reporting requirements.
- Water information is classified into 11 categories (for example, Category 3 – water storage information). The Water Regulations specify the necessary information and the time at which it is required.

By referring to the Water Act and Water Regulations, utilities can comprehensively identify the information they must provide to the BOM. The BOM also maintains a tool which allows utilities to generate a list of reporting obligations.[12]

The BOM also publishes the annual Urban National Performance Report (Urban NPR). We currently include a requirement in our PWU reporting manuals that water utilities enter the relevant NWI indicator information into the Urban NPR database. The Urban NPR is produced by agreement with all states and territories, and reports on the urban NWI indicators. Of the water utilities we regulate, Hunter Water, Sydney Water and WaterNSW report to the BOM on NWI indicators. The NWI indicators include water resource supply and usage, financial operations, bills and pricing, assets, water quality compliance and customer performance.

12 Bureau of Meteorology, *Find Your Organisation*, at http://www.bom.gov.au/water/regulations/search.php, accessed 19 January 2018.

To be included in the Urban NPR, water utilities must be either a bulk water utility or service at least 10,000 connected properties.[13] At this time, none of the WIC Act licensees are servicing 10,000 or more connected properties. When we developed the list of WIC Act licensee IPART performance indicators in 2008, we included NWI indicators to create a similar data set. For WIC Act licensees the current sets of IPART indicators includes 37 NWI indicators for both network operators and retail suppliers.[14]

For the water utilities that are required provide NWI indicator information to BOM there is limited duplication with our IPART performance indicators. However, we intend to remove any duplication that does exist.

13 Bureau of Meteorology 2017, National performance report 2015-16: urban water utilities – Part A.

14 WIC Act network operators and retail suppliers both have 37 NWI indicators included in their IPART performance indicators list, although some of these indicators are the same, it is a different set of 37 indicators for each licence type reflecting the different services provided under the two licence types.

3 Approach to monitoring utility performance

This chapter sets out our approach to monitoring the performance of water utilities.

3.1 How do we monitor performance?

We use our performance indicators in addition to our compliance monitoring, to monitor the performance of the water utilities we regulate.

The licences applicable to each utility authorise a water utility to carry out its functions, and regulate how it undertakes those functions through terms and conditions. We continue to move towards outcomes-based regulation of water utilities. Where possible the terms and conditions of water utility licences are outcomes-based rather than having prescriptive inputs or outputs or other requirements.

Due to the diversity of function, size, structure and services provided by each of the water utilities it is not possible to apply a single set of outcomes or objectives to the performance of the water utilities we regulate. However, the performance outcomes currently in the operating licences of PWUs and WIC Act licensees generally fall within four key performance areas:

- water quality and quantity
- assets
- environment, and
- customers.

To measure performance against the outcomes, we use compliance monitoring (including compliance with performance standards and consistency with plans and management systems), performance indicators, or use a combination (Figure 3.1). In some cases, our existing compliance monitoring approach is likely to be sufficient, whereas for other outcomes, we might require more detail regarding performance (through the use of indicators).

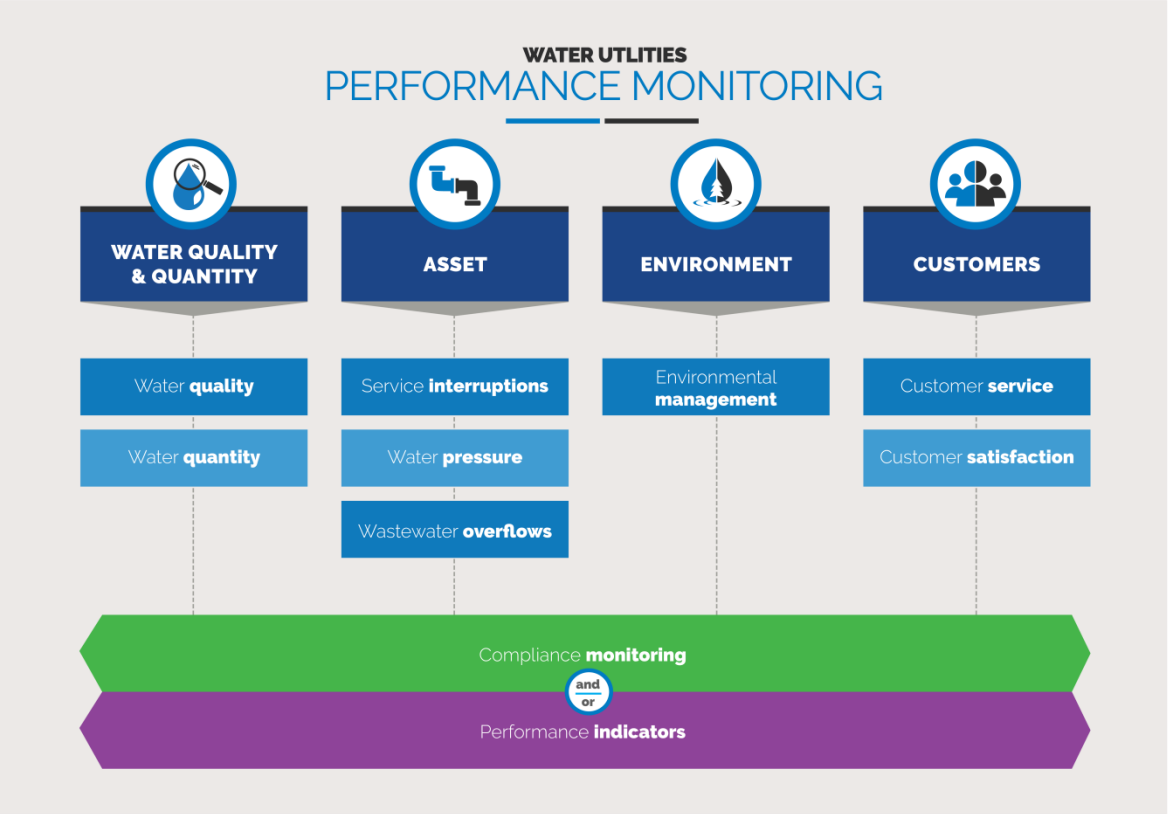
We monitor performance against the expected outcomes through compliance monitoring (including self-reporting, public disclosure of information, and audits). Our approach to compliance is detailed in our Compliance and Enforcement Policy.[15]

In some cases, compliance with these requirements may be sufficient to ensure appropriate processes are in place to successfully realise the desired outcomes. This is likely to be when it is not necessary to improve the performance of the utility beyond a reasonable threshold, and therefore being compliant with the requirements is all that is required. Either a utility complies or does not comply with a regulatory requirement (and therefore outcome). Where

15 IPART *Compliance and Enforcement Policy*, December 2017.

we audit, we can consider auditor commentary to ascertain the risk of a utility failing in the near future or to build a picture of how a utility is performing over time.

Figure 3.1 IPART's approach to performance monitoring



Where our compliance monitoring is able to appropriately monitor performance, we do not propose to have additional measures (such as performance indicators) to monitor the water utility's performance.

In other cases, there is an expectation of maintenance or improvement in service over time that may require the use of performance indicators to provide information on whether the service is being improved or not. Performance indicators can signal changes to trend and with a proper monitoring mechanism they can provide valuable information to react to events that can significantly impact a utilities capacity to comply with its regulatory outcomes. Performance indicators can be an important tool in assessing or driving improvements in performance, however they need to be established appropriately, otherwise they may create perverse incentives or outcomes for the utilities.

3.2 Our approach to using performance indicators

As part of this review we are considering how we use performance indicators in the ongoing monitoring of water utilities' performance. We could use performance indicators either as a monitoring tool or to provide incentives for the business to improve its performance through public reporting or setting performance standards, as required. We have previously used the information from performance indicators as a monitoring tool and do

not currently undertake analysis of performance outcomes or incentivise changes in performance, other than by publishing the data we collect.

We prepare and report to the Minister annually on WIC Act licensee compliance and the operational audits for each of the PWUs. Our annual WIC Act compliance report includes the IPART performance indicator information we collect from WIC Act licensees. We separately publish the IPART performance indicator information we collect from PWUs, together with a selection of NWI indicators (for context), annually in a database.

The effectiveness of an approach to drive change depends on the extent to which utilities are influenced by performance indicator information being made public. That is, if the public reporting of trends in performance is sufficient to generate change in performance, then further action may not be required. Alternatively, public reporting may be insufficient and further analysis of the information and setting of performance standards to drive changes within a utility may be required to improve performance, where necessary. We do not currently have a position as to whether it is appropriate for us to have a role in incentivising performance, and intend to consider this within the review.

We are also considering the format we use to publish performance indicator information, including whether it should be in a stand-alone format or as part of a broader performance monitoring report that considers both performance indicator information and compliance monitoring.

We do not currently gather lead indicators. However, we expect that water utilities may gather some lead indicators within their own management systems and practices based on their own internal objectives, irrespective of our requirements. We are interested in stakeholder views about whether there are any lead indicators available that may be relevant to our monitoring of the performance of water utilities, and whether it is appropriate for us to collect lead indicators. We are also seeking stakeholder views about whether there are appropriate lead indicators available within each of the performance areas (see Chapters 4, 5, 6 and 7).

Question

2 Should IPART take a more active approach in incentivising performance through the use of performance indicators?

3 Do stakeholders have a view on the format of reporting performance indicators?

3.3 A single set of performance indicators

As outlined in Chapter 2, PWUs and WIC Act licensees currently have different performance indicators. This is a reflection of the different legislative frameworks and the timing of when we developed the indicators.

In initiating this review, we have considered whether it is appropriate to continue having a different set of performance indicators for the different types of utilities. Our initial position is that where the service being provided to the customer is essentially the same, we will seek to capture the same performance indicator information. This means that, regardless of whether it is a PWU or WIC Act licensee, the indicators of whether the service is being performed in line with the preferred outcomes will be the same. This ensures that where the

utilities are providing the same service to customers, they will be treated the same under the performance indicator framework, thereby creating a level playing field for public and private water utilities.

The exception to this is where we consider that there are justifiable differences between the utilities or their services that require them to have different indicators. For example, where the legislative framework differs between water utilities, or where the proportionality of the outcome is substantially different (eg, where one water utility provides a service to 100 customers and another provides the same service to 10,000 customers).

Question

4 Do stakeholders agree that it is appropriate for water utilities providing the same service to be subject to the same performance indicators?

3.4 We collect data for WIC Act licence fees

We also collect data to assist with administration of licence fees. The Minister for Energy and Utilities determines a methodology for calculating the annual licence fees.[16] We collect data to allow the calculation of the annual fee for each licence according to that methodology. For example, the volume of water supplied by the water utility and the number of customers connected. We currently refer to this data as 'performance indicators', however this data does not indicate performance. Our proposed approach is to continue to collect this data, clearly stating the purpose and renaming the data set to 'licence data'.

Question

5 Do stakeholders agree with our proposed approach to the collection of licence data to allow IPART to calculate WIC Act licence fees?

16 *Water Industry Competition Act 2006*, s 14.

4 Performance – Water quality and quantity

This performance area focuses on water utilities' activities relating to water quality and quantity (including recycled water), incorporating the maintenance of certain standards of water quality as well as ensuring an efficient level of water conservation (quantity).

4.1 Water quality

In relation to maintaining an appropriate level of water quality for the intended end use, most water quality outcomes are assessed through regular continuous monitoring and reporting as well as regular expert audit, rather than performance indicator requirements. This is because a non-compliance with the water quality requirements may have significant consequences to public health and customers.

To comply with water quality obligations, where relevant each PWU is required to maintain a water quality management system for drinking water that is consistent with the Australian Drinking Water Guidelines (ADWG). In addition to this, where relevant water utilities must also maintain a management system for recycled water that is consistent with the Australian Guidelines for Water Recycling (AGWR).

The PWUs are required to ensure that the water quality management system is fully implemented and that all relevant activities are carried out in accordance with the management system and to the satisfaction of NSW Health. We audit compliance with licence obligations annually applying a risk based approach.

In addition the PWUs are required to prepare an annual compliance and performance report on their management of the quality of drinking water and recycled water. This report is required to set out quality management activities and programs, an assessment of the performance of critical control points over the long-term in accordance with the guidelines and any non-compliance with the management system and actions taken to resolve these non-compliances.

WIC Act licensed network operators are required to prepare and maintain a Water Quality Plan.[17] This plan must be consistent with the ADWG (for drinking water supplied) and AGWR (for non-potable water supplied). The licensee is required to ensure that the plan is fully implemented and kept under regular review and that all activities are carried out in accordance with the plan.

All water utilities are required to prepare an annual compliance and performance report on their management of the quality of drinking water and recycled water. This report must set out quality management activities and programs, an assessment of the performance of critical control points over the long-term in accordance with the guidelines and any non-

17 *Water Industry Competition (General) Regulation 2008*, Sch 1, cl. 7.

compliance with the management system and action/s taken to resolve these non-compliances.

The licences granted under the WIC Act require operators and retailers to report immediately to IPART and other relevant entities any incident that threatens, or could threaten, water quality, public health or safety.[18]

We require WIC Act licensees to conduct audits before commencing commercial operation (and, if relevant, commencing retail supply to customers). Some of the audits we require are:[19]

- **Licence plans audits**. These audits assess the adequacy of the licence plans (including the Water Quality Plan, where relevant).
- **New infrastructure audits**. These audits assess compliance of new infrastructure with the Licence, Licence Plans and the WIC Regulation, before WIC Act licensees start to operate water industry infrastructure commercially. The audit also assess that the infrastructure is operating safely and in accordance with the licence plans.
- **Periodic operational audits**. These audits check if the licensee is operating in compliance with its Licence, the legal formal requirements, and its licence plans.
- **Incident-related audits**. In response to a significant compliance incident in the conduct of licence activities that threatens, or could threaten, water quality, public health or safety.

Duplication

Water utilities are required to provide water quality information to NSW Health, customers and in some cases the Minister for Public Health. The NWI indicators also include water quality indicators.

PWU licensees must provide reports to NSW Health as outlined in the respective reporting manuals.[20]

Hunter Water must provide periodic reports to NSW Health in relation to water quality data, including drinking water fluoridation, and drinking water and recycled water quality monitoring.[21]

Sydney Water must prepare, for each quarter, a report (the Quarterly Water Quality Monitoring Report) on health and aesthetic water characteristics and raw water operational characteristics. Sydney Water must publish the Quarterly Water Quality Monitoring Report on its website, including performance against health guideline values and aesthetic values.[22] Sydney Water must prepare and submit a monthly report to NSW Health on Sydney Water's fluoride monitoring. Also, Sydney Water must prepare and submit to NSW

18 IPART *Network Operator's Reporting Manual*, June 2016, section 2.2; and IPART *Retail Supplier's Reporting Manual* June 2016, s 2.2.
19 IPART *Audit Guideline for Greenfield Schemes*, July 2013, s 2.1.1 and 2.1.2.
20 IPART, *Hunter Water Reporting Manual*, May 2017 s 1.6.2; IPART, *Sydney Water Reporting Manual*, August 2017, s 1.6.2 and IPART, *Water NSW Reporting Manual*, February 2018, s 1.6.2.
21 IPART, *Hunter Water Reporting Manual*, May 2017, s 3.1.
22 IPART, *Sydney Water Reporting Manual*, August 2017, s 2.1.1.

Health a quarterly report on Sydney Water's monitoring of Drinking Water and Recycled Water.[23]

WaterNSW must submit an annual compliance and performance report to IPART and NSW Health on the implementation of the Water Quality Management System.[24] Further, NSW Health must submit to IPART and NSW Health a report regarding its monitoring of water quality, only in relation to the Declared Catchment Areas. Also, WaterNSW must report to its customers (which are supplied water from within the Declared Catchment Areas only) and NSW Health the results of routine water quality monitoring undertaken under the monitoring program that it develops as part of the Water Quality Management System.[25]

WIC Act licensees are required to report to the Minister administering the *Public Health Act 1991* any incident in the conduct of the licensee's activities that threatens, or could threaten, water quality, public health or safety.[26]

Potential performance indicators

There appears to be limited need to incorporate performance indicators to measure, or drive, performance in relation to water quality because:

- all of the water utilities are required to have management systems or plans in place to meet the ADWG and AGWR
- all of the water utilities are required to report on any non-compliance
- in addition to reporting to IPART, all of the water utilities have some obligations to report to NSW Health, customers or the Minister for Public Health on water quality outputs and outcomes, and
- water utilities' performance in meeting those obligations is generally good.

We consider that a compliance-based approach to this outcome is appropriate. We do not propose to capture any additional information or performance indicators on water quality.

Questions

6 Do stakeholders agree with the proposed compliance-based approach to water quality?

7 Are there any performance indicators, including lead indicators, that stakeholders consider should be adopted for water quality?

4.2 Water quantity

In relation to providing a level of service consistent with an efficient level of water conservation, there are outcomes based obligations in the PWU licences.

23 IPART, *Sydney Water Reporting Manual*, August 2017, s 2.1.2.
24 IPART, *Water NSW Reporting Manual*, February 2018, s 2.1.1.
25 IPART, *Water NSW Reporting Manual*, February 2018, s 2.2.1.
26 *Water Industry Competition (General) Regulation 2008*, Sch 1, cl 1(2)(b).

For bulk water supply both Hunter Water and WaterNSW are required to submit a Water Conservation Strategy to IPART that includes:[27]

- identification and documentation of existing water conservation activities
- a process for identifying additional options for conserving water
- a process for comparing these options, and
- a process for selecting options for implementation.

Hunter Water and WaterNSW are required to submit a water conservation work program to IPART based on the processes set out in the Water Conservation Strategy.[28]

Under their licences, Hunter Water and Sydney Water are also required to develop a methodology for determining the economic level of water conservation (ELWC) within and downstream of their water treatment plants.[29] The ELWC methodology enables the utilities to assess ongoing and new investment in water conservation measures, and to determine the appropriate level of investment. This methodology is required to include:[30]

- water leakage
- water recycling, and
- water efficiency (including demand management).

Following the approval of this methodology by IPART, the utilities are required to develop a water conservation program that is consistent with this methodology. Sydney Water and Hunter Water are required to report on this water conservation program to IPART on a regular basis.

Hunter Water's licence also requires that until it has an approved ELWC methodology it must ensure that the 5 year rolling average for annual residential water consumption calculated for each financial year is equal to or less than 215 kilolitres per property.[31]

One of the purposes of the WIC Act is to facilitate the development of infrastructure for the production and reticulation of recycled water. The WIC Act and WIC Regulation require the network operators to inform to IPART each source from which the water handled by the infrastructure is derived and also the authorised purposes for that water, in the case of non-potable water.[32] The majority of WIC Act licensees either source drinking water from a public water utility or, in the case of SDP, supply to a public water utility.

Given that the PWUs are already required to report to IPART on water conservation activities, we do not consider that further performance indicators are necessary to measure performance in this area.

27 Hunter Water Operating Licence 2017-2022, cl 2.1.3; Water NSW Operating Licence 2017-2022 cl 2.7.2.
28 Hunter Water Operating Licence 2017-2022, cl 2.1.4; Water NSW Operating Licence 2017-2022 cl 2.7.3.
29 Hunter Water Operating Licence 2017-2022, cl 2.2.3; Sydney Water Operating Licence 2015-2020 cl 3.2.1.
30 Hunter Water Operating Licence 2017-2022, cl 2.2.2; Sydney Water Operating Licence 2015-2020, cl 3.2.1.
31 Hunter Water Operating Licence 2017-2022, cl 2.2.1.
32 *Water Industry Competition Act 2006*, s 20; *Water Industry Competition (General) Regulation 2008*, cl 18(2).

Potential performance indicators

At this stage, IPART considers that a compliance-based approach for water quantity based on the current requirements contained in the PWU licences is appropriate. If a future review of the licences results in changes to these compliance requirements, IPART will consider whether a performance indicator is required to ensure performance is maintained in relation to water quantity.

Questions

8 Do stakeholders agree with the proposed compliance-based approach to water quantity?

9 Are there any performance indicators, including lead indicators, that stakeholders consider should be adopted by IPART for water quantity?

5 Performance – Assets

This performance area relates to ensuring water utilities' assets are maintained to provide appropriate and consistent levels of water and wastewater network services to their customers. To do this, water utilities are expected to meet the obligations outlined in relevant service standards, and implement management systems or plans, to track and maintain asset condition.

PWUs' licences require them to have an asset management system in place for carrying out the functions required of the utilities. Their management system must be consistent with the standard *ISO 55001:2014*. The water utilities must ensure that the management system is fully implemented and that all relevant activities are carried out in accordance with the management system.[33]

The WIC Regulation requires WIC Act licensees to have an infrastructure operating plan (IOP) before commencing to operate water infrastructure commercially.[34] The IOP sets out the required arrangements in relation to the licensee's physical assets, including:

- design, construction, operation and maintenance
- particulars as to the life-span of the infrastructure
- the system redundancy built into the infrastructure and its renewal
- safe and reliable performance, and
- the monitoring and reporting of standards of service.

WIC Act licensees must also ensure that their infrastructure is properly designed, constructed and operated in a safe and reliable manner and maintained in a proper condition. The licensee must also have regard to any publicly available standards and codes.[35]

5.1 Service interruptions

The operating licences for both Hunter Water and Sydney Water require the utilities to have two System Performance Standards[36] regarding water continuity:[37]

- Number of properties that experience an unplanned water interruption that lasts for more than five continuous hours, in the preceding financial year, as defined in the licence.

33 Hunter Water Operating Licence 2017-2022, cl 4.1; Sydney Water Operating Licence 2015-2020, cl 4.1; WaterNSW Operating Licence 2017-2022, cl 5.1.
34 *Water Industry Competition (General) Regulation 2008*, Sch 1, cls 6 and 13.
35 *Water Industry Competition (General) Regulation 2008*, Sch 1, cl 3.
36 The setting of performance standards does not form part of this review.
37 Hunter Water Operating Licence 2017-2022, cl 3.3.2; Sydney Water Operating Licence 2015-2020, cl 4.2.2.

- The number of properties that experience three or more unplanned water interruptions that each lasts for more than one hour, in the preceding financial year, as defined in the licence.

These utilities are currently required to report on their performance in relation to these standards. As a result of the most recent review of Sydney Water's licence it was recommended to remove main break response times from the System Performance Standards in the licence and place them in the reporting manual as performance indicators. Sydney Water's licence also requires it to report, in accordance with the Reporting Manual, on response times for water main breaks and leaks.[38]

Under its licence WaterNSW must manage service interruptions in accordance with its asset management system.[39] WaterNSW is required to provide IPART with an annual compliance and performance report with respect to WaterNSW's performance regarding service interruptions.[40] There are not any existing service interruption performance indicators required by the WaterNSW Reporting Manual.

Where relevant, WIC Act licensees' IOPs include provisions about performance standards for service interruptions. The IOP is also required to outline the maintenance, monitoring and reporting of standards of service.[41] The customer contract for WIC Act licensees' small retail customers must include (amongst other things) the circumstances in which water or sewerage services may not be available to the customer's premises, the notice that will be given to customers and the arrangements in place for the supply of water and sewerage services in those circumstances.[42]

Duplication of indicators

There are two IPART performance indicators for Hunter Water and Sydney Water that seek to collect the same information as the System Performance Standards. We propose to remove those duplicate indicators from the list of IPART performance indicators for Sydney Water and Hunter Water.

WIC Act licensees are currently required to report on 14 IPART performance indicators related to the frequency and duration of service interruptions. Three of those indicators are from the list of NWI indicators, however, two of the other IPART performance indicators are the same. This means the WIC Act licensees effectively report on 12 performance indicators for service interruptions.

Average or threshold approach to monitoring performance

There are two alternatives for measuring performance in relation to this outcome:

- number of customers interrupted for longer than a particular threshold (this can also be based on a number of repeat interruptions), or

38 Sydney Water Operating Licence 2015-2020, cl 4.3. Hunter Water does not have this requirement.
39 Water NSW Operating Licence 2017-2022, cl 4.2.3.
40 Water NSW Operating Licence 2017-2022, cl 4.2.3; IPART, *Water NSW Reporting Manual*, February 2018 s 4.1.1.
41 *Water Industry Competition (General) Regulation 2008*, cl 6(1).
42 *Water Industry Competition (General) Regulation 2008*, Sch 2, cls 14(2) and 19(2).

- average duration for all interruptions.

There are positives and negatives with each approach. The threshold approach can highlight instances of poor performance and focus utilities' attention to improve those instances, however it could inadvertently result in water utilities not placing sufficient urgency on those incidents that are likely to fall below the threshold. Alternatively, using an average of all incidents can provide an incentive for utilities to focus on improving all incidents and reduces the impact of one-off events, however this approach gives poor performance outliers a lower weighting, and therefore limits the use of the indicator in targeting events.

The current approach for the Hunter Water and Sydney Water performance indicators is to use the threshold approach. However, WIC Act licensees currently have 14 indicators related to service interruptions.[43] In contrast to the PWU equivalent performance indicators each of these WIC Act licensee performance indicators is based on the average approach.

There is no clear difference between the services provided by the different water utilities (PWU and WIC Act licensees) which would justify a different approach to performance indicators. Our initial view is that each water utility should be reporting on the same indicators for service interruptions, regardless of whether it is a PWU or WIC Act licensee.

Questions

10 Do stakeholders agree on the proposed approach to have the same performance indicators for service interruptions for PWUs and WIC Act licensees?

11 Do stakeholders have a view as to which approach (threshold or average) would result in a better measure of performance?

Potential indicators for service interruptions

As discussed above we are considering whether we should have an average and/or threshold approach to performance indicators related to service interruptions. We are also considering what types of indicators may be appropriate for bulk water utilities or network operators.

At this stage, we propose to retain the mains breaks and leaks indicators that were previously incorporated into the Reporting Manual for Sydney Water.[44] These indicators have recently been changed from System Performance Standards to performance indicators. IPART proposes to retain them as performance indicators for Sydney Water in the short-term to determine the continued effectiveness of the information.

Question

12 Do stakeholders have views on the potential performance indicators for service interruptions?

43 IPART, *Retail Supplier's Reporting Manual*, June 2016, p 44.
44 IPART, *Sydney Water Reporting Manual*, August 2017, IPART performance indicators I9 – I12

5.2 Water pressure

The operating licences for both Hunter Water and Sydney Water require the utilities to have a System Performance Standard regarding water pressure.[45] Each standard is based on the:

> Number of properties that experience a water pressure failure in the preceding year, as defined in the licence.

Where relevant, WIC Act licensees' IOPs include provisions about performance standards for water pressure. The IOP is also required to outline the maintenance, monitoring and reporting of standards of service. The customer contract for WIC Act licensees' small retail customers must include (amongst other things) the minimum pressure at which water is to be supplied.[46]

Duplication of indicators

There is only one current performance indicator for Hunter Water and Sydney Water relating to water pressure and this indicator is seeking to measure a similar output to the System Performance Standard.[47] We propose to remove the duplicate indicator from the IPART performance indicators for PWUs.

Potential indicators for water pressure

We consider the Systems Performance Standard could be applied as a performance indicator for both PWUs and WIC Act licensees. That is, reporting on the number of properties that experience a water pressure failure in the preceding year, as defined in the IOP. We note, setting a performance standard for WIC Act licensees is outside the scope of this review.

Our initial view is that the System Performance Standard is sufficient in measuring the performance of water utilities against this outcome and there is no need for any additional performance indicators.

Question

13 Do stakeholders agree with our initial view that there is no need for any additional performance indicators for water pressure?

5.3 Wastewater overflows

The operating licences for both Hunter Water and Sydney Water require the utilities to have two System Performance Standards regarding wastewater overflows.[48] These are based on:

- Number of properties (other than public properties) that experience an uncontrolled wastewater overflow in dry weather in the preceding financial year, as defined in the licence, and

45 Sydney Water Operating Licence 2015-2020, cl 4.2.1; Hunter Water Operating Licence 2017-2022, cl 3.3.1.
46 *Water Industry Competition (General) Regulation 2008*, Sch 2, cl 14(2).
47 IPART, *Hunter Water Reporting Manual*, May 2017 and IPART, *Sydney Water Reporting Manual*, August 2017, Indicator number I5.
48 Hunter Water Operating Licence 2017-2022, cl 3.3.3; Sydney Water Operating Licence 2015-2020, cl 4.2.3.

- Number of properties (other than public properties) that experience three or more uncontrolled wastewater overflows in dry weather in the preceding financial year, as defined in the licence.

Where relevant, WIC Act licensees' IOPs include provisions about performance standards for wastewater overflows. The IOP is also required to outline the maintenance, monitoring and reporting of standards of service.[49] Further, the wastewater service contracts to small retail customers must indicate the arrangements that are in place to deal with wastewater blockages or overflows, amongst other things.[50]

Duplication of indicators

Some current IPART performance indicators for Hunter Water and Sydney Water are similar to the System Performance Standards regarding wastewater overflows. The key difference for the IPART indicators is that there is a further degree of granularity between high priority and medium priority overflows. We also should consider whether the further differentiation of wastewater overflows between high and medium priority provides additional benefit in measuring the utility's performance against the outcome.

Our initial view is that instances of overflows are to be minimised, regardless of whether they are high or medium priority and therefore there does not appear to be significant benefit in requiring the additional granularity of high and medium priority overflows. We propose to not differentiate between grades of overflows in the future.

Potential indicators for wastewater services

Our initial view is that to measure the performance of utilities against this outcome, indicators could cover the:

- number of customers being impacted multiple times within the year,
- number of overflow instances occurring throughout the network,
- duration of wastewater overflows, and
- response time to contain wastewater overflows.

Questions

14 Do stakeholders have views on the potential indicators for wastewater overflows?

15 Are there any performance indicators, including lead indicators, that stakeholders consider should be adopted by IPART for asset performance?

49 *Water Industry Competition (General) Regulation 2008*, cl 6(1).
50 *Water Industry Competition (General) Regulation 2008*, Sch 2, cl 19.

6 Performance – Environment

This performance area is concerned with ensuring that water utilities manage any adverse impacts that their operations could have on the environment. This occurs primarily through meeting the requirements of environmental legislation and licence obligations, including in some cases the maintenance of an environmental management system (EMS) or environmental management plans.

6.1 Environmental management

Under the operating licences, each PWU is required to have an EMS certified to *Australian Standard ISO 14001: Environmental Management Systems*.[51] An EMS is a structured system designed to help organisations manage their environmental impacts. PWUs are also required to carry out all activities in accordance with their EMS.

The WIC Act requires the Minister to consider certain principles before a WIC Act licence is granted, including the protection of the environment.[52] Where appropriate, licences granted under the WIC Act include conditions in relation to the protection of the environment. In some cases there are specific licence conditions relating to environmental management plans.

All water utilities are required to comply with the requirements of NSW environment legislation. Where relevant, water utilities are required to hold Environment Protection Licences that are issued by the NSW Environmental Protection Agency (EPA). These licences require the water utilities to collect and publish pollution monitoring data as determined by the EPA.

The legislative frameworks of Sydney Water and WaterNSW require environmental indicators to be compiled; this is discussed in more detail below.

Sydney Water's obligations to report against environmental performance indicators

Sydney Water's operating licence requires it to: [53]

- prepare indicators of the direct impact of its activities on the environment
- monitor and compile data on those indicators, and

51 Hunter Water Operating Licence 2017-2022, cl 4.2.1; Sydney Water Operating Licence 2015-2020, cl 6.1.1; Water NSW Operating Licence 2017-2022, cl 5.2.1.

52 *Water Industry Competition Act 2006*, s 7(1)(a). Before granting a licence, the Minister must also be satisfied that the applicant has the capacity to carry out the activities in a manner that does not represent a significant risk of harm to the environment: *Water Industry Competition (General) Regulation 2008*, cls 7 and 11.

53 *Sydney Water Act 1994*, s. 14(1)(d) requires that the operating licence contain a condition requiring Sydney Water to compile indicators to enable preparation of an annual report on its performance, and to provide information for a year to year comparison in relation to its performance in this area; Sydney Water Operating Licence 2015-2020, cl 6.2.1.

- report on those indicators in accordance with the Reporting Manual.

We do not use the information relating to Sydney Water's current environmental performance indicators, so we do not have a strong view as to the most appropriate indicators that should be adopted.

WaterNSW's obligations to report against environmental performance indicators

WaterNSW's operating licence requires WaterNSW to:[54]

- monitor, record and compile data on environmental indicators relevant to declared catchment areas (the environmental indicators are set out in Appendix C of the Reporting Manual), and
- report on those indicators in accordance with its Reporting Manual.

We do not use the information relating to WaterNSW's current environmental performance indicators, so we do not have a strong view as to the most appropriate indicators that should be adopted.

Catchment Health Indicators

In addition to water quality, WaterNSW is required to report on catchment health indicators. WaterNSW currently collects five indicators. These are a subset of indicators developed, approved, and published by the NSW Government (see also Section 2.2). IPART does not propose to change these indicators, however we are open to considering the most efficient way of collecting this information (noting that other agencies also collect this information from WaterNSW).

Potential indicators for environmental performance

At present, we publish, but do not use, the information that water utilities provide in relation to the environmental indicators.

We think the desired environmental outcomes will be met if the PWUs comply with the environmental legislative framework administered by the EPA and environmental obligations in their licences (eg, the PWU licence requirement to have and implement an EMS). However, there are legislative requirements that Sydney Water and WaterNSW's operating licences require them to report on environmental indicators.

Questions

16 Do stakeholders agree with the compliance-based approach to environmental performance with the exception of where there is a legislative requirement for environmental indicators?

54 *Water NSW Act 2014*, s 12(2)(b) requires Water NSW to compile indicators of the direct impact of its activities (including but not limited to the impact of energy that is used and the waste which is generated) on the environment so as to provide information about its performance and enable reports to be prepared; Water NSW Operating Licence 2017-2022 cl 2.3.1(b).

17 Do stakeholders have a view as to what would be the most appropriate environmental indicators Sydney Water should report on?

18 Do stakeholders have a view as to what would be the most appropriate environmental indicators WaterNSW should report on?

19 Are there any environmental performance indicators that stakeholders consider should be adopted for Hunter Water and WIC Act licensees?

20 Are there any lead indicators available for environmental performance that should be included as an IPART performance indicator?

7 Performance – Customers

This performance area relates to water utilities' responsibilities toward their customers. This includes meeting certain standards of service and implementing appropriate processes, policies and protocols for managing or dealing with customers. It also relates to ensuring customers are satisfied with the overall performance of their water utility.

7.1 Customer service

Water utilities are required to develop, implement and comply with a range of measures and mechanisms relating to their customers. The operating licences for the PWUs, and the WIC Regulation, outline the specific mechanisms that water utilities must have in place for managing relationships with their customers.

Hunter Water and Sydney Water must have a customer contract in place and available to anyone free of charge.[55] As an alternative to this standard customer contract, they can negotiate with individual customers to enter into individual commercial agreements.

WaterNSW does not have an obligation to have a standard customer contract in place, and enters into individual commercial agreements with its customers.

WIC Act retail suppliers are required to have a customer contract in place for small retail customers, and to make it available on their website.[56] WIC Act network operators have individual commercial agreements with their customers.

The customer contract specifies the rights and obligations of both customers and water utilities in relation to the services that the water utilities provide. Customer contracts cover a range of topics including the services that customers can expect from their water utilities and the policies, protocols and procedures that govern how water utilities and customers will interact.

Water utilities must have policies and procedures for assisting customers who are experiencing a financial hardship, including by implementing payment plans for customers.[57] Hunter Water, Sydney Water and WIC Act retail suppliers must also maintain and implement procedures for disconnecting or restricting water supply in the event of non-payment.[58]

Under their licences, water utilities must maintain a procedure for receiving, responding to and resolving complaints consistent with Australian standards.[59] PWUs must be members of the Energy and Water Ombudsman of NSW,[60] and WIC Act licensees that supplies water

55 Hunter Water Operating Licence 2017-2022, cl 5.7.2; Sydney Water Operating Licence 2015-2020, cl 5.1.2.
56 WIC Regulation, s 2, cl. 14 and cl. 7B(1)(a).
57 Hunter Water Operating Licence, 2017-2022 cl 5.3.1; Sydney Water Operating Licence 2015-2020, cl 5.4.1; Water NSW Operating Licence 2017-2022, cl 6.8.
58 Hunter Water Operating Licence 2017-2022, cl 5.3.1(c); Sydney Water Operating Licence 2015-2020, cl 5.4.1(c); *Water Industry Competition (General) Regulation 2008*, Sch 2, cl. 14.
59 Hunter Water Operating Licence, cl. 5.5; Sydney Water Operating Licence, cl. 5.6; Water NSW Operating Licence, cl. 6.9, *Water Industry Competition (General) Regulation 2008,* Sch 2(4).
60 Hunter Water Operating Licence 2017-2022, cl. 5.6.1; Sydney Water Operating Licence 2015-2020 cl 5.7.1; Water NSW Operating Licence 2017-2022, cl 6.10.1.

or provide sewerage services (or both) to small retail customers must be members of an approved ombudsman scheme.[61]

Hunter Water and WaterNSW are also required to provide an annual compliance and performance report to IPART regarding their customer and stakeholder relations.[62] Areas that annual compliance and performance reports must report on include activities and minutes from customer advisory groups, problems arising from complaints and the action taken to resolve them, and changes to key documents including the customer contract.

WaterNSW's operating licence also requires it to report on a number of capture, store and release (CSR) Water Performance Standards.[63] We consider that WaterNSW's compliance with these CSR Water Performance Standards is sufficient and we are not proposing any additional performance indicators.

Duplication of indicators

The existing NWI indicators include a customer set which capture information about the number of customers, number and nature of complaints and restrictions. The existing list of IPART indicators for WIC Act retail suppliers includes a sub-set of NWI indicators.

Potential indicators for this outcome

Our initial position is that this outcome is adequately met through the existing requirements for utilities to maintain customer contracts, financial hardship and non-payment policies and procedures, complaints and dispute resolution procedures and provide information to the public. Therefore, our preliminary view is that these requirements will be best delivered through a compliance-based approach and no performance indicators are required in the future.

Question

21 Do stakeholders agree with our proposed compliance-based approach to customer service?

22 Are there any performance indicators, including lead indicators, that stakeholders consider should be adopted by IPART for water quantity?

7.2 Customer satisfaction

The vast majority of customers of the water utilities in NSW cannot change their provider if they are unhappy with the service they receive. For this reason, there are customer service obligations in the licences of the PWUs and WIC Act licensees. However, meeting customer service obligations does not necessarily mean that customers are satisfied. We are considering adopting a qualitative customer satisfaction performance indicator to help drive improvement of water utilities' customer service. We are reviewing approaches from other jurisdictions, which are outlined below.

61 *Water Industry Competition Act 2006*, s 50.
62 IPART, *Hunter Water Reporting Manual*, May 2017, cl 5.1 and IPART, *Water NSW Reporting Manual*, February 2018, cl 6.1.
63 Water NSW Operating Licence, 2017-2022 cl 4.3.

Why are we interested?

A customer-centric focus has become an increasing priority for service providers – even organisations that operate in regional monopolies, as water utilities do. Service providers that operate at the highest standard of customer service:

- can understand customers and align services to meet customer preferences
- can make better decisions about the investment of scarce resources through customer engagement, and
- can enjoy reputational advantage, whereby customers are more willing to accept temporary reductions in service performance.

Performance indicators relating to customer satisfaction are being increasingly applied in other jurisdictions to drive improvement in the customer service provided by monopoly service providers.

As noted above, current customer-related reporting mechanisms are largely compliance-based, focussing on whether water utilities have adequate systems and policies in place to meet certain levels of customer service. The levels of customer service that customers can expect from water utilities (for example, how quickly enquiries will be dealt with) are articulated in water utilities' customer contracts.

We consider that these factors contribute to customer satisfaction. In fact, many of these elements lay the foundation for satisfied customers. However, this information alone does not necessarily indicate whether a water utility's customers are satisfied with the service they receive.

Customer satisfaction is becoming an important focus in the water industry as water utilities respond to customer's growing expectations about customer service. Economic regulators in other jurisdictions are now collecting performance indicators relating to customer satisfaction to monitor and drive improvement in water utilities' customer service. While the design of indicators varies, they typically include a qualitative customer survey of a water utility's perceived performance in relation to its customers. This may also be coupled with quantitative indicators that provide a snapshot of customer interactions (for example, the number of complaints made). The examples provided in the box below are illustrative of the approaches to measuring customer satisfaction used by other jurisdictions.

We are interested in collecting a measure of customer satisfaction based on a customer survey. We do not currently have a preference for the exact design of a qualitative customer satisfaction performance indicator. We are aware that the collection of a customer survey may pose issues across PWU and WIC Act licensees due to the need to collect a statistically significant number of responses. As some WIC Act licensees have very few customers, this may not be feasible. It will be necessary to carefully consider how the survey can be best applied across the water utilities we regulate.

How do other jurisdictions measure customer satisfaction?

Recent developments in regulatory frameworks in other jurisdictions highlight the interest in improving the customer service of water utilities through the use of performance indicators. Table 7.1 provides an overview of customer performance indicators currently used in England and Wales, and Scotland. In Victoria, the Essential Services Commission (ESC) is in the process of developing a qualitative measure of customer satisfaction.

Measures used to drive improved customer service have evolved from simple to more complex over time. They can be broadly understood as incorporating either one or both of the following components:

- Quantitative measures which aggregate a variety of aspects considered to affect customer satisfaction within a weighted score.
- Qualitative measures of customer perceptions based on customer surveys.

Examples of different customer satisfaction performance indicators are briefly explained below and summarised in Table 7.1.

Overall Performance Assessment (Ofwat)

The Overall Performance Assessment (OPA) is an example of a quantitative measure. It was first developed for England and Wales by the Water Services Regulation Authority (Ofwat), and has since been applied in Scotland by the Water Industry Commission for Scotland (WICS). The OPA is a points-based system which assesses utilities' performance across 17 activities relating to customers and the environment. However, noticeably lacking is an indication of customer's actual reported perceptions of a water utility's performance. Both Ofwat and the WICS are implementing qualitative performance indicators to either compliment or supersede purely quantitative measures of customer satisfaction.

Customer Measure of Experience (C-Mex) and Developer Services Measure of Experience (D-Mex)

Ofwat propose the Customer Measure of Experience (C-Mex) as the primary indicator to assess utilities' customer service in the forthcoming price review period (PR19). The C-Mex is based on: a customer satisfaction survey of customers who have had direct contact with their water utility; and, a customer experience survey of customers selected at random, irrespective of whether they have directly contacted their water utility. The C-Mex will provide a reputational and financial incentive to water utilities by offering performance payments or penalties to the best and worst ranked utilities in England and Wales.

Ofwat also applies the Developer Services Measure of Experience (D-Mex) is to assess a water utilities customer's experience for their developer services customers. These customers include small and large property developers. The D-Mex is comprised of a qualitative satisfaction survey and a quantitative measure of utilities against a set of key metrics based on established service levels for developer services customers. Based on this scoring, utilities are ranked annually which provides a reputational incentive. The best and worst performers receive financial performance payments and penalties respectively, based on a percentage of revenue.

Household Customer Experience Measure (hCEM)

The Household Customer Experience Measure (hCEM) is a customer satisfaction performance measure comprised of both qualitative and quantitative components. It quantifies the success of Scottish Water's interactions with its customers, rather than other factors that lead to customer satisfaction as seen in the OPA. The quantitative component is based on measurement of actual interactions, such as the total number of complaints/contacts per thousand properties connected. The qualitative component is based on customer experience survey and a perception survey. The hCEM is an interesting case as it was the first performance measure to include the views of customers who experience an issue with their service but do not make direct contact with Scottish Water to complain.

The hCEM is complemented by the non-Household Customer Experience Measure (nhhCEM), and is designed to serve a similar purpose to the residential version.

Victorian Essential Services Commission

During 2016 and 2017, the ESC developed and undertook a pilot to study the satisfaction of customers for the Victorian water businesses. The pilot was designed to identify the best questions for a customer satisfaction survey, find the best response scales and consider the ways of asking these questions in an ongoing manner.

The pilot had 27 questions based on published customer satisfaction reporting, overseas examples and the Water Services Association of Australia's benchmarking of customer perceptions. In doing this, some questions were asked more than once on different scales in order to further identify the most appropriate questions for any ongoing survey.

As a result of the pilot, the ESC has been developing a trial to test the proposed methodology and collect results to subsequently inform any potential implementation of such a survey. The trial has been based on four questions with two additional questions to determine whether the response was from a customer and/or a tenant:

1. On a scale of 1-10 how would you rate your water/wastewater provider delivering value for money?

2. On a scale of 1-10 how would you rate your trust for your water/wastewater provider?

3. On a scale of 1-10 how would you rate your water/wastewater provider's reputation in the community?
4. On a scale of 1-10 how would you rate your satisfaction with your water/wastewater provider as a service provider overall?
5. Are you primarily responsible for paying your water bills?
6. Are you living in a property that is rented?

To mitigate against potential bias in the data, the survey uses:

- A rolling average across quarters to ensure timing of the survey does not unnecessarily impact results.
- A 'robocalling' technique based on randomly generated numbers within the water utility's geographic area.

Broad Measure of Customer Service (BMCS)

The UK Office of Gas and Electricity Markets (Ofgem) is the government regulator for the electricity and downstream natural gas markets in Great Britain. It is responsible for regulating 14 licenced distribution network operators. Ofgem uses the Broad Measure of Customer Satisfaction (BMCS) to drive the network companies to provide good customer service and to engage with stakeholders to inform business decisions.

The BMCS measures customer contact with their network companies across a range of different services. The overall customer service performance of each network company is benchmarked across the industry, and network companies receive financial rewards or penalties based on their performance. The BMCS has three components: customer satisfaction survey, complaints metric and stakeholder engagement incentive.

Source: Essential Service Commission 2016, *A model for pricing services in Victoria's water sector: position paper launch;* Office of Gas and Electricity Markets (Ofgem) 2011, *RIIO-ED1: Broad measure of customer satisfaction;* Ralston, A. and Macfarlane, L. 2015, *The Role of Customers in the Strategic Review of Charges Process in the Water Industry in Scotland*; Ralston, A. and Macfarlane, L. 2015, *The Role of Customers in the Strategic Review of Charges Process in the Water Industry in Scotland*; Water Industry Commission for Scotland 2015. *Information Note: Measuring Customer Service*; Water Services Regulation Authority (Ofwat) 2017, *Delivering Water 2020: Our final methodology for the 2019 price review*; Water Services Regulation Authority (Ofwat) 2017, *Delivering Water 2020: Our methodology for the 2019 price review Appendix 3: customer measure of experience (C-MeX) and developer services measure of experience (D-MeX)*.

Table 7.1 Performance indicators relating to customer satisfaction outcomes from relevant jurisdictions

Performance indicator	Description	Sector – Regulator (jurisdiction)	Components/calculation	Frequency
Benchmarking Customer Performance Trial	A trial survey approach to test customer perceptions of value for money, trustworthiness, reputation in the community and overall satisfaction.	Water – ESC (Victoria)	Automated random phone call survey that asks four questions of the public (it includes non-customers).	Rolling Quarterly
Overall Performance Assessment (OPA)	Scores performance across a range of areas that affect customer performance: ▼ Water supply levels of service ▼ Sewerage levels of service ▼ Customer service ▼ Environmental performance.	Water – WICS (Scotland)	Calculated by scoring 17 individual performance measures. Each measure is weighted to reflect its relative importance to customers, and aggregated to establish an overall index of customer service performance.	Annual
Household Customer Experience Measure (hCEM)	Comprised of both a qualitative and quantitative component, the hCEM quantifies the success of water utilities' customer interactions.	Water – WICS (Scotland)	Quantitative component: companies score or lose points based on based on contacts with customers. Qualitative component: based on customer experience survey and a perception survey (including customers who had their service affected, but didn't actively make contact).	Annual
Customer Measure of Experience (C-Mex)	Financial and reputational incentive to improve the satisfaction of residential customers with their customer experience.	Water – Ofwat (England and Wales)	Customer service satisfaction survey of customers who have had direct contact with their companies. Customer experience survey of customers selected at random collects wider views of companies' performance. Financial incentives and penalties applied based on performance. At least five communication channels (at least three online).	Annual
Developer Services Measure of Experience (D-Mex)	Mechanism to incentivise water companies to provide an excellent customer experience for developer services (new connections) customers.	Water – Ofwat (England and Wales)	Regular qualitative satisfaction survey. Quantitative measure of performance against key metrics. Company performance ranked and performance payments or penalties applied.	Annual
Broad Measure of Customer Satisfaction (BMCS)	BCMS aims to replicate the sorts of measures typically used by consumer-facing businesses in a competitive environment.	Electricity – Ofgem (UK)	▼ Customer Satisfaction Survey (connections/interruptions / enquiries) ▼ Complaints Metric ▼ Stakeholder Engagement and Consumer Vulnerability Incentive	Annual

Potential indicators for customer satisfaction

IPART is interested in gathering stakeholder views on the application of customer satisfaction performance indicator(s) and proposes to consult with water utilities on the design and application of any future performance indicator.

The quantitative performance indicators PWUs and WIC Act licensees are currently required to collect measure outputs that potentially impact on customer satisfaction, such as percentage of complaints resolved within 10 business days, percent of calls abandoned, and number of complaints. If we adopt qualitative customer satisfaction performance indicator(s), depending on the final design, it is possible that there will be duplication of information regarding the impact on customer satisfaction. This will be further considered as part of our Draft Report. The appropriate timing of implementing customer satisfaction performance indicator(s) will also be considered in our Draft Report.

Our preliminary view is that if we adopt a customer satisfaction approach it will no longer be necessary to gather the current IPART customer performance indicators.

Questions

23 Do stakeholders consider qualitative customer satisfaction surveys as an appropriate performance indicator for water utilities?

24 Do stakeholders have views on the design of a qualitative performance indicator for customer satisfaction and how it could be implemented?

25 Do stakeholders agree with our preliminary view that other indicators are not necessarily required if the qualitative measure of customer satisfaction is adopted?

8 Other work related to this review

In addition to considering the performance indicators for water utilities from 1 July 2018, there are potential issues regarding the future direction of assessing water utilities' performance that could be considered beyond this review.

8.1 Reviews of performance standards

In some cases, performance indicators will have desired standards attached to them. These performance standards are the minimum standards in relation to water delivery, water quality, service interruptions and other matters that must be met by water utilities in relation to that indicator.

The PWU licences specify some performance standards for each of the PWUs. The current standards outlined for the water utilities are largely the legacy of historical performance standards outlined in previous operating licences. The performance standards do not necessarily reflect the actual levels of performance provided by utilities. This review will not be considering whether the established performance standards are correct or need revising, we will consider this question in reviews of operating licences.

WIC Act licensees do not have stated performance standards in their licences. This is due to the diverse range of services a licensee may offer. However it is a condition of the licence that a licensee's infrastructure operating plan specifies the service performance standards and a licensee is required to comply with these performance standards.[64]

While changes to the performance standards are outside the scope of this review, we note that going forward performance standards may be revised during our reviews of operating licences for PWUs. These reviews of the operating licences could consider how the performance standards for each of the PWUs should be set in the future and whether there needs to be any changes to the current standards. There is the potential that changes to the performance standards may result in subsequent changes to the performance indicators.

8.2 Changes to the WIC Act

The licensing framework under the WIC Act will change when the *Water Industry Competition Amendment (Review) Act 2014* comes into force. The Department of Planning and Environment is currently developing a draft regulation to accompany the amended WIC Act. The regulation will be available for public comment later in 2018. We understand the amended WIC Act (and regulation) will commence in late 2019.

In the absence of the amended regulation, it is not possible to fully consider the appropriate performance indicators in the context of the proposed licensing framework. However,

64 *Water Industry Competition (General) Regulation 2008*, Sch 2, cls 6(1) and 6(2).

following the commencement of the amended WIC Act we will consider whether we need to revisit the performance indicators for WIC Act licensees and the (new) approval holders.

8.3 Benchmarking water utilities

Another reason for performance indicators is to benchmark the performance of the utilities. Benchmarking could be subsequently used to inform decisions regarding the efficient costs of the utilities to provide the regulated services.

In a competitive market, firms are continually benchmarked against each other by their customers. Customers will gravitate towards strong performers that are offering value for money and away from poor performers that are not offering value for money. These competitive forces drive businesses to improve.

For monopoly businesses it is not possible to receive this type of feedback from customers. Instead, there is an opportunity for the regulator to simulate these competitive forces by undertaking benchmarking. There are several benefits to performance benchmarking, including that it may:

- help inform expenditure reviews
- help businesses demonstrate their performance, and
- simulate competitive forces and help drive businesses to improve.

Benchmarking can be based on the overall performance of the service providers, or on particular aspects of performance or service components. The most appropriate approach depends on the level of comparability between the service providers or service components, the availability and quality of data, and whether differences in the operating environment can be adequately controlled for.

While our current form of regulation makes some use of benchmarking in assessing performance during the expenditure review, we intend to make greater use of benchmarking in future price reviews. We are currently considering and developing several approaches to performance benchmarking through our pricing function. We are not considering any benchmarking information requirements, including related performance indicators, as part of this review. Making greater use of performance benchmarking will improve our ability to assess a utility's costs while encouraging it to improve its performance. Benchmarking is also complementary to potential further changes in the form of regulation.

A Current IPART performance indicators

Table A.1 Hunter Water – IPART performance indicators

Indicator Number	Category	Indicator
WQ 1(H)	Water quality	Microbial compliance - Percentage of routine water quality samples that comply with the Australian Drinking Water Guidelines for E. coli Chemical/physical compliance - Percentage of routine water quality samples that comply with the Australian Drinking Water Guidelines for key chemical/physical parameters
I2	Infrastructure	Occurrence of water interruptions to affected properties (ie, the number of properties experiencing three or more Planned or Unplanned water interruptions) of more than one hour duration).
I3	Infrastructure	Events leading to planned or unplanned water interruption where 250 or more properties experience an interruption of over 5hrs duration.
I4(H)	Infrastructure	The number of residential properties affected by planned water supply interruptions in peak hours (5am -11pm).
I5	Infrastructure	The number of properties in the utility's drinking water supply network experiencing a water pressure failure which is occasional or recurrent, but not permanent.
I6	Infrastructure	Number of High Priority sewage overflows per 100 km of sewer main responded to in a year.
I7	Infrastructure	Number of Medium Priority sewage overflows per 100 km of sewer main responded to in a year.
I8	Infrastructure	Number of residential customers' dwellings affected by sewer spills not contained within 1 hour of notification.
E1	Environment	Total number of proceedings and Penalty Notices under *the Protection of the Environment Operations (POEO) Act 1997* issued to the water utility.
E2	Environment	Total number of proceedings and Penalty Notices under *the Protection of the Environment Operations (POEO) Act 1997* issued to contractors engaged by the water utility.
E3	Environment	Total electricity consumption by water assets (kWh/ML of water supplied to be included).
E4	Environment	Total electricity consumption by sewer assets (KWh/ML of sewage collected).
E5	Environment	Electricity consumption from renewable sources or generated by the water utility expressed as a percentage of total electricity consumption
E6	Environment	Total mass of biosolids produced by the water utility.
E7	Environment	Percent of solid waste recycled or reused expressed as a percentage of solid waste generated.
E8	Environment	Total area of clearing of native vegetation.
E9	Environment	Total area of native vegetation rehabilitated, including due to replanting and protection by the water utility.
E10	Environment	Total area of native vegetation gain due to rehabilitation,

Indicator Number	Category	Indicator
		replanting and protection by the water utility.
E11	Environment	Total number and nature of proceedings or Penalty Notices of conditions under licences issued to the water utility by DPI Water for water management.
C1	Customers	The percentage of complaints resolved within 10 business days.
C2	Customers	Percent of calls abandoned
C3	Customers	Percent of metered accounts of customers that receive a bill not based on a business meter read for one year.
C4	Customers	The total number of residential customers disconnected for non-payment of amounts owed to the water utility.
C5	Customers	The total number of non-residential customers disconnected for non-payment of amounts owed to the water utility.
C6	Customers	Total number of residential customers on whom water flow restrictions have been imposed.
C7	Customers	Total number of non-residential customers on whom water flow restrictions have been imposed.
C8	Customers	Number of residential customers per 1000 residential properties experiencing financial difficulty who are being assisted through the water utility's hardship program or payment plans.
C9	Customers	Percentage of residential customers in C 8 who are: a) not meeting ongoing water and sewerage costs (debt increasing), b) covering ongoing water and sewerage costs (debt stable), and c) covering ongoing costs and portion of arrears (debt reducing).
C10	Customers	Percentage of residential customers in C 8 who pay by: a) Payment plan, and b) Centrepay
C11	Customers	Break up by percentage of residential customers who no longer meet C 8 by exiting the water utility's hardship program or payment plans because: a) they have paid off their outstanding debt, b) they have been flow restricted, and c) other.

Source: IPART, *Hunter Water Reporting Manual*, May 2017

Table A.2 Sydney Water – IPART performance indicators

Indicator Number	Category	Indicator
I1	Infrastructure	The number of properties affected by an unplanned water interruption duration of more than 1 hour and less than or equal to 5 hours
I2	Infrastructure	Occurrence of water interruptions to affected properties (i.e. the number of properties experiencing 3 or more Planned or Unplanned water interruptions of more than one hour duration).
I3	Infrastructure	Events leading to planned or unplanned water interruption where 250 or more properties experience an interruption of over 5 hrs duration.
I4(S)	Infrastructure	The number of residential properties affected by planned water supply interruptions in peak hours (5am-9am and 5pm-11pm).
I5	Infrastructure	The number of properties in the water utility's drinking water supply network experiencing a water pressure failure which is occasional or recurrent, but not permanent.
I6	Infrastructure	Number of High Priority sewage overflows per 100 km of sewer main responded to in a year.
I7	Infrastructure	Number of Medium Priority sewage overflows per 100 km of sewer main responded to in a year.
I8	Infrastructure	Number of residential customers' dwellings affected by sewer spills not contained within 1 hour of notification.
I9	Infrastructure	Percentage of priority 6 breaks/leaks in drinking water mains that Sydney Water responded to within 3 hours.
I10	Infrastructure	Percentage of priority 5 breaks/leaks in drinking water mains that Sydney Water responded to within 6 hours.
I11	Infrastructure	Percentage of priority 5 breaks/leaks in drinking water mains that Sydney Water responded to within 24 hours.
I12	Infrastructure	Percentage of priority 4 breaks/leaks in drinking water mains that Sydney Water responded to within 5 days.
E1	Environment	Total number of proceedings and Penalty Notices under the *Protection of the Environment Operations (POEO) Act 1997* issued to the water utility.
E2	Environment	Total number of proceedings and Penalty Notices under *the Protection of the Environment Operations (POEO) Act 1997* issued to contractors engaged by the water utility.
E3	Environment	Total electricity consumption by water assets (kWh/ML of water supplied to be included).
E4	Environment	Total electricity consumption by sewer assets (KWh/ML of sewage collected).
E5	Environment	Electricity consumption from renewable sources or generated by the water utility expressed as a percentage of total electricity consumption.
E6(S)	Environment	Total volume of Controlled Sewage Overflows that occur in dry weather, expressed as a percentage of total sewage effluent discharged to the environment.
E7(S)	Environment	Percentage of trade waste customers in compliance with their wastewater discharge limits as outlined in their water utility trade waste agreements.

Indicator Number	Category	Indicator
E8	Environment	Total mass of biosolids produced by the water utility
E9	Environment	Percent of solid waste recycled or reused expressed as a percentage of solid waste generated.
E10(S)	Environment	Total mass of solid waste generated by the water utility
E11	Environment	Total area of clearing of native vegetation.
E12	Environment	Total area of native vegetation rehabilitated, including due to replanting and protection by the water utility.
E13	Environment	Total area of native vegetation gain due to rehabilitation, replanting and protection by the water utility.
E14	Environment	Total number and nature of proceedings or Penalty Notices of conditions under licences issued to the water utility by NOW for water management.
C1	Customers	The percentage of complaints resolved within 10 business days.
C2	Customers	Percent of calls abandoned
C3	Customers	Percent of metered accounts of customers that receive a bill not based on a business meter read for one year.
C4	Customers	The total number of residential customers disconnected for non-payment of amounts owed to the water utility.
C5	Customers	The total number of non-residential customers disconnected for non-payment of amounts owed to the water utility
C6	Customers	Total number of residential customers on whom water flow restrictions have been imposed.
C7	Customers	Total number of non-residential customers on whom water flow restrictions have been imposed.
C8	Customers	Number of residential customers per 1000 residential properties experiencing financial difficulty who are being assisted through the water utility's hardship program or payment plans.
C9	Customers	Percentage of residential customers in C 8 who are: a) not meeting ongoing water and sewerage costs (debt increasing) b) covering ongoing water and sewerage costs (debt stable) c) covering ongoing costs and portion of arrears (debt reducing).
C10	Customers	Percentage of residential customers in C 8 who pay by: a) Payment plan b) Centrepay.
C11	Customers	Break up by percentage of residential customers who no longer meet C 8 by exiting the water utility's hardship program or payment plans because: a) they have paid off their outstanding debt b) they have been flow restricted c) other.
C12	Customers	The number of non-residential customers affected by an unplanned water interruption of greater than 1 hour duration.
C13	Customers	The average duration of unplanned interruptions experienced by non-residential customers.

Source: IPART, *Sydney Water Reporting Manual*, August 2017

Table A.3 WaterNSW – IPART performance indicators

Indicator Number	Category	Indicator
IPART H1	Water quality	Water quality in catchment waterways in the Catchment Area measured against the applicable water quality objectives specified in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000
IPART H2	Water quality	Occurrence of Cryptosporidium and Giardia cysts or oocysts in catchment waterways
Environment IPART E1	Energy	Total annual energy consumed by Water NSW (electricity, fuel and gas) in units provided on energy bills
Environment IPART E2	Green electricity	Green electricity consumption as a % of total electricity consumption by Water NSW
Environment IPART E3	Waste	Estimated volume and type of waste annually sent to landfill from Water NSW's activities (kg per year)
Environment IPART E4	Waste	Waste recycled or reused expressed as a percentage of total waste generated by Water NSW's activities, by type of waste

Source: IPART, *WaterNSW Reporting Manual*, July 2017

Table A.4 WaterNSW - Catchment Health indicators

Theme	Sub-theme	Measurement
Biodiversity and habitats	Biodiversity	2001 and 2006 Spring AusRivAS scores, plus additional data from Sustainable Rivers Audit (SRA)
Water availability	Surface Water	Level and variability of streamflow
Water availability	Surface Water	Total volume of water by type released from Water NSW storages
Water quality	River Health	Turbidity, pH, EC, Total Al, Total Fe, Total N, Total P, NOx, NH4, FRP, Chlorophyll a , DO and water temperature – assessed against ANZECC/ARMCANZ (2000) guidelines
Water quality	River Health	Compliance with recreational guidelines cyanobacteria for Water NSW storages only

Source: IPART, *WaterNSW Reporting Manual*, July 2017

Table A.5 WIC Act - Network operators - IPART performance indicators

Indicator number	Category	Indicator
NWI W1	Sources of water	Volume of water sourced – Surface water (ML)
NWI W2	Sources of water	Volume of water sourced – Groundwater (ML)
NWI W3	Sources of water	Volume of water sourced – Desalination (ML)
NWI W4	Sources of water	Volume of water sourced – Recycling (ML)
NWI W5	Sources of water	Volume of water sourced – Bulk supplier (ML)
NWI W6	Sources of water	Volume of water sourced – Volume of bulk recycled water purchased (ML)
WICA#1	Sources of water	Volume of water sourced – Other (ML)
NWI W7	Sources of water	Total volume of water sourced
NWI W16	Sewage collected	Volume of sewage collected – residential sewage, non-residential sewage and non-trade waste (ML)
NWI W17	Sewage collected	Volume of sewage collected – trade waste (ML)
NWI W18	Sewage collected	Total volume of sewage collected (ML)
NWI W10	Volume of water supplied (uses of water supplied)	Volume of water supplied – other (ML)
WICA#2	Volume of water supplied (uses of water supplied)	Volume of water supplied – On-site (ML)
NWI W13	Volume of water supplied (uses of water supplied)	Volume of water supplied for environmental flows (ML)
NWI W14	Volume of water supplied (uses of water supplied)	Volume of bulk water exports (ML)
WICA#3	Volume of water supplied (uses of water supplied)	Total volume of water supplied (ML)
NWI W15	Volume of recycled water supplied (Uses of recycled water)	Volume of bulk recycled water exports (ML)
NWI W23	Volume of recycled water supplied (Uses of recycled water)	Volume of recycled water supplied – environmental flows (ML)
NWI W24	Volume of recycled water supplied (Uses of recycled water)	Volume of recycled water supplied – on-site (ML)
NWI W25	Volume of recycled water supplied (Uses of recycled water)	Volume of recycled water supplied – other (ML)
NWI W26	Volume of recycled water supplied (Uses of recycled water)	Total of recycled water supplied (ML)
NWI A2	Infrastructure	Length of water mains (km)
WICA#4	Infrastructure	Length of potable water mains (km)
WICA#5	Infrastructure	Length of non-potable water mains (km)
NWI A5	Infrastructure	Length of sewerage mains and channels (km)
NWI A1	Infrastructure	Number of water treatment plants providing full treatment
NWI A7	Infrastructure	Number of recycled water treatment plants
NWI A4	Infrastructure	Number of sewage treatment plants
NWI A8	Infrastructure performance	Number of water main breaks (per 100 km water main)

Indicator number	Category	Indicator
NWI A12	Infrastructure performance	Number of sewerage breaks and chokes (per 100 km of sewer main)
NWI A13	Infrastructure performance	Property connection breaks and chokes (per 100 km of sewer main)
NWI E5	Infrastructure performance	Number of sewage treatment plants compliant at all times (eg, 5/6)
NWI C15	Service Interruptions	Average duration of unplanned interruption – water (minutes)
WICA#6	Service Interruptions	Average duration of planned interruption – water (minutes)
WICA#7	Service Interruptions	Average duration of unplanned interruption – potable water (minutes)
WICA#8	Service Interruptions	Average duration of planned interruption – potable water (minutes)
WICA#9	Service Interruptions	Average duration of unplanned interruption – non-potable water (minutes)
WICA#10	Service Interruptions	Average duration of planned interruption – non-potable water (minutes)
NWI C16	Service Interruptions	Average sewerage interruption (minutes)
NWI C17	Service Interruptions	Average frequency of unplanned interruption – water
WICA#11	Service Interruptions	Average frequency of planned interruption – water
WICA#12	Service Interruptions	Average frequency of unplanned interruption – potable water
WICA#13	Service Interruptions	Average frequency of planned interruption – potable water
WICA#14	Service Interruptions	Average frequency of unplanned interruption – non-potable water
WICA#15	Service Interruptions	Average frequency of planned interruption – non-potable water
WICA#16	Service Interruptions	Average frequency of unplanned interruption – sewerage
NWI E13	Environmental	Sewer overflows reported to environmental regulator (per 100 km of sewer main)
NWI E4	Environmental	Percent of sewage volume treated that was compliant (%)
NWI E7	Environmental	Compliance with environmental regulator – sewerage (yes/no)
NWI E8	Environmental	Percent of biosolids reused
NWI H2	Water quality	Number of zones where microbiological compliance was achieved (eg, 23/24)
NWI H3	Water quality	Percent (%) of population where microbiological compliance was achieved
NWI H4	Water quality	Number of zones where chemical compliance was achieved (eg, 23/24)

Source: IPART, *Network Operator's Reporting Manual*, June 2016

Table A.6 WIC Act licensees - Retail suppliers – IPART performance indicators

Indicator number	Category	Indicator
WICA#17	Sources of water	Volume of water sourced from public water utility (ML)
NWI W1	Sources of water	Volume of water sourced – Surface water (ML)
NWI W2	Sources of water	Volume of water sourced – Groundwater (ML)
NWI W3	Sources of water	Volume of water sourced – Desalination (ML)
NWI W4	Sources of water	Volume of water sourced – Recycling (ML)
WICA#1	Sources of water	Volume of water sourced – Other (ML) (please specify)
NWI W7	Sources of water	Total volume of water sourced (ML)
NWI W16	Sewage collected	Volume of sewage collected – residential sewage, non-residential sewage and non-trade waste (ML)
NWI W17	Sewage collected	Volume of sewage collected – trade waste (ML)
NWI W18	Sewage collected	Total volume of sewage collected (ML)
NWI W8	Uses of water supplied	Volume of water supplied - residential (ML)
NWI W9	Uses of water supplied	Volume of water supplied - commercial/municipal/industrial (ML)
NWI W10	Uses of water supplied	Volume of water supplied - other (ML)
NWI W13	Uses of water supplied	Volume of water supplied - environmental flows (ML)
NWI W14	Uses of water supplied	Volume of bulk water exports (ML)
WICA#18	Uses of water supplied	Total volume of water supplied (ML)
NWI W20	Uses of recycled water	Volume of recycled water supplied - residential (ML)
NWI W21	Uses of recycled water	Volume of recycled water supplied - commercial, municipal, industrial (ML)
NWI W22	Uses of recycled water	Volume of recycled water supplied - agriculture (ML)
NWI W23	Uses of recycled water	Volume of recycled water supplied - environmental flows (ML)
NWI W24	Uses of recycled water	Volume of recycled water supplied - on-site
NWI W25	Uses of recycled water	Volume of recycled water supplied - other (ML)
NWI W15	Uses of recycled water	Volume of bulk recycled water exports (ML)
NWI W26	Uses of recycled water	Total of recycled water supplied (ML)
NWI C2	Customers - water	Number of connected residential properties – water supply
NWI C3	Customers - water	Number of connected non-residential properties – water supply
NWI C4	Customers - water	Total number of connected properties – water supply
NWI C6	Customers - sewerage	Number of connected residential properties - sewerage
NWI C7	Customers - sewerage	Number of connected non-residential properties - sewerage
WICA#19	Customers - sewerage	Number of connected non-residential properties - trade waste
NWI C8	Customers - sewerage	Total number of connected properties - sewerage
WICA#20	Small customers	Number of small retail customers in relation to

Indicator number	Category	Indicator
		water supply
WICA#21	Small customers	Number of small retail customers in relation to the provision of sewerage services
NWI C9	Complaints	Number of water quality complaints
NWI C10	Complaints	Number of water service complaints
NWI C11	Complaints	Number of sewerage service complaints
NWI C12	Complaints	Number of billing and account complaints – water and sewerage
WICA#22	Complaints	Number of other complaints – water and sewerage
NWI C13	Complaints	Total water and sewerage complaints
NWI C18	Restrictions	Number of customers to which restrictions applied for non-payment of water bills
WICA#23	Restrictions	Number of customers to which disconnections applied
NWI C19	Restrictions	Number of customers to which legal actions applied for non-payment of water bills
NWI C15	Service Interruptions	Average duration of unplanned interruption – water (minutes)
WICA#6	Service Interruptions	Average duration of planned interruption – water (minutes)
WICA#7	Service Interruptions	Average duration of unplanned interruption – potable water (minutes)
WICA#8	Service Interruptions	Average duration of planned interruption – potable water (minutes)
WICA#9	Service Interruptions	Average duration of unplanned interruption – non -potable water (minutes)
WICA#10	Service Interruptions	Average duration of planned interruption – non - potable water (minutes)
NWI C16	Service Interruptions	Average sewerage interruptions (minutes)
NWI C17	Service Interruptions	Average frequency of unplanned interruption – water
WICA#11	Service Interruptions	Average frequency of planned interruption –water
WICA#12	Service Interruptions	Average frequency of unplanned interruption – potable water
WICA#13	Service Interruptions	Average frequency of planned interruption – potable water
WICA#14	Service Interruptions	Average frequency of unplanned interruption – non -potable water
WICA#15	Service Interruptions	Average frequency of planned interruption – non - potable water
WICA#16	Service Interruptions	Average frequency of unplanned interruption – sewerage

Source: IPART, *Retail Supplier's Reporting Manual*, June 2016