3 Form of regulation

Technical Paper 3

- This paper is presented in two parts – Part A covers IPART's existing regulatory mechanisms and Part B looks at a 'roadmap for modernising regulation'.
- We consider there is a strong case to move to a five-year regulatory period – IPART has existing safeguards in place to handle movements in capital expenditure, water sales and borrowing costs.
- We are likely to trigger IPART's demand volatility adjustment mechanism given our higher water sales over the current regulatory period.
- Hunter Water would incur unbudgeted operating costs during a drought event. We have documented those costs and likely timing, noting that IPART has invited comment on a drought cost pass-through mechanism.
- This paper offers a roadmap for modernising regulation. We think that a five-year period would provide the time for IPART, utilities and stakeholders to do a 'step-back review' into complementary regulatory mechanisms, disciplines and incentives.
- The roadmap suggests a process and timeline for a broader review of IPART's methodology. We identify five groups of issues for the review: customer and community engagement, linking performance standards and prices, driving cost and service improvements, setting specific tariffs and more cost-effective environmental regulation.

Contents – Part A

Contents – Part B

PART A: FORM OF REGULATION

Form of regulation refers to the methods used to regulate prices for monopoly services. These methods include how costs are assessed, whether prices are directly or indirectly controlled, how differences between forecast and actual demand are handled, and how performance gains are incentivised.[1]

Part A of this technical paper sets out Hunter Water's positions on IPART's existing mechanisms and processes to drive and incentivise Hunter Water to deliver safe and reliable services in a cost-effective way, while taking into account customer views and wants around service levels, asset performance and ease of doing business.

We put forward a case for a five-year determination and explain the safeguards in IPART's regulatory model that make this a practical and workable approach for our next regulatory period. We consider that a five-year determination period offers near-term and longer-term benefits.

For the next regulatory period, the additional year would provide revenue certainty for Hunter Water, price and bill certainty for our customers, and reduce some of the administrative costs associated with the regulatory review process.

For future price periods, a five-year determination cycle would make a crucial difference. It would allow a window of time for IPART to work with the NSW metropolitan water utilities on broader improvements and refinements to the regulatory model – a process and approach that could be repeated on a five-yearly cycle.

IPART's current approach to setting the revenue requirement and detailing pricing principles is fundamentally sound. However, there are other complementary ways of incentivising and empowering the water businesses to deliver services that customers expect and value. Having participated in the numerous IPART regulatory reviews impacting water utilities since the 2016 price review, we consider that an extra year in the review cycle is the best way of creating the time and space to contemplate and implement broader improvements.

Part B of this technical paper sets out a 'roadmap for regulatory reform'. We propose a process for systematically addressing key elements of IPART's regulatory framework to ensure it remains best placed to achieve the NSW government's objectives. We have not detailed a specific regulatory model or specific changes. Rather, we identify some potential areas to be addressed and give examples from other jurisdictions and sectors. We then suggest five broad groupings of issues that IPART may wish to look at in a coordinated and integrated way.

We consider that the right time to commence this work is after the price reviews for Hunter Water and Sydney Water, as attention will inevitably focus on expenditure proposals and tariff settings. Creating a three-year window after the price reviews would give IPART, the utilities and stakeholders the chance to think more freely about broader objectives and options for the design of the regulatory model. Of equal importance, a review early in the regulatory period would leave time for all parties to work out how to implement and operationalise any changes – before we start preparing our next price submission.

[1] IPART, 2016, Review of Hunter Water's prices from 1 July 2016, Final Report, p.23.

1. Length of the determination period

Hunter Water proposes a five-year price path covering the period 1 July 2020 to 30 June 2025. This price submission sets out Hunter Water's capital works program, operating expenditures, revenues, demand forecasts and prices over a five-year regulatory period.

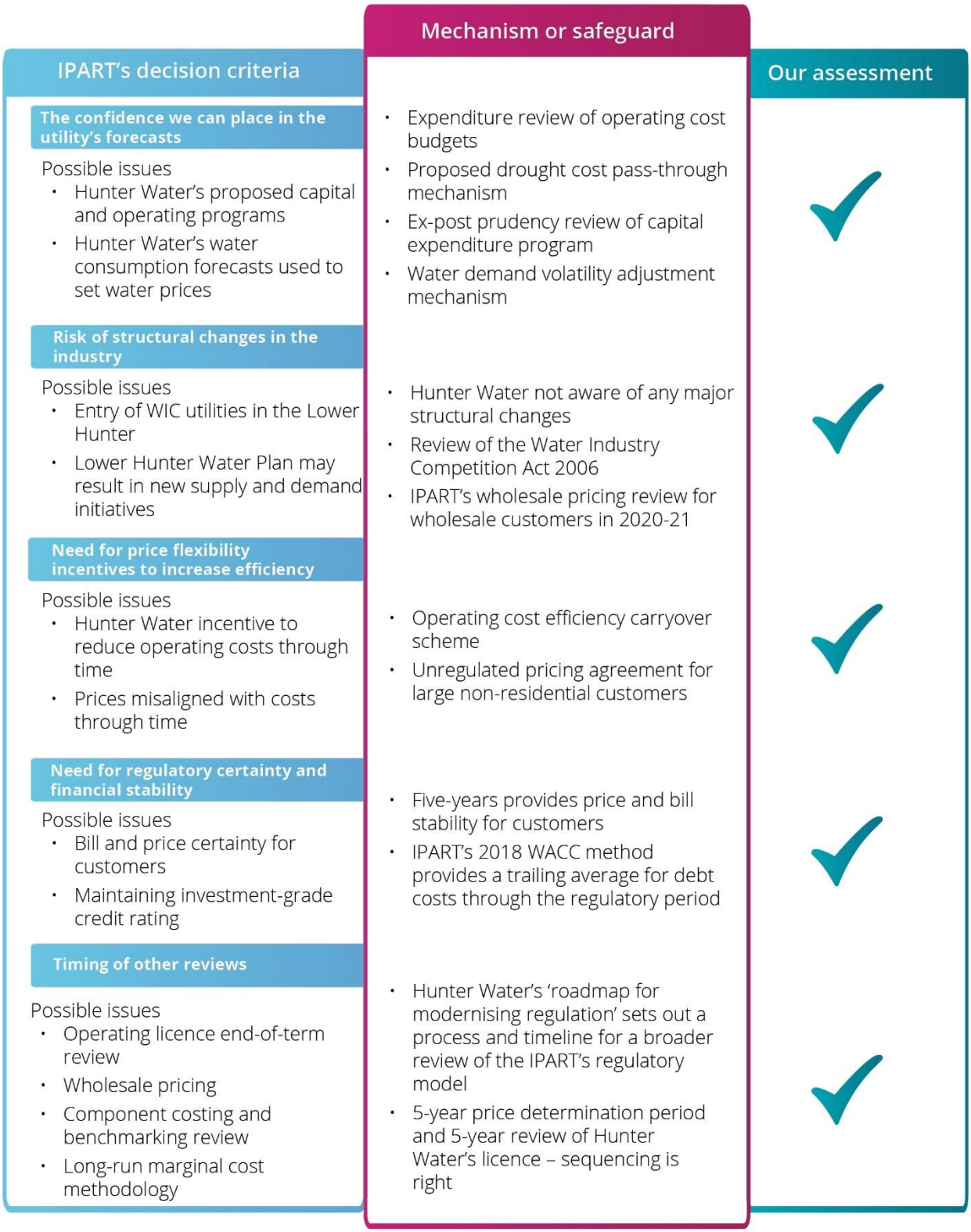
IPART assesses and balances multiple factors when deciding on the length of the determination period for each regulated utility. IPART sets out the following key considerations:[2]

- The level of confidence in the utility's forecasts
- The risk of structural changes in the industry
- The need for price flexibility and incentives to increase efficiency
- The need for regulatory certainty and financial stability
- The timing of other relevant reviews, and
- Stakeholder views.

IPART has adopted a four-year period for Hunter Water and Sydney Water for more than a decade.[3] Hunter Water considers that IPART's regulatory model is robust and capable of managing the risks and uncertainties of a five-year price path. The section below explains the adjustment mechanisms and safeguards in IPART's regulatory model that make it possible to move to a longer price period – protections that apply to both Hunter Water and our customers.

[2] IPART, 2016, Review of Hunter Water's prices from 1 July 2016, Final Report, p.23.
[3] In 2014, Hunter Water asked IPART for an earlier review of IPART's 2013 Determination for Hunter Water. IPART agreed to bring forward the determination by one year, thereby aligning the Hunter Water and Sydney Water four-year determinations from 1 July 2016.

Figure 1.1 Assessment of five-year price period against IPART's decision criteria



1.1 Key risks in moving to a five-year regulatory period

1.1.1 Demand forecasts

Hunter Water invests considerable time and resources to forecasting water demand forecasts across multiple time horizons, recognising that there will always be variability driven by weather patterns within and across years. The water consumption forecasts feed directly into Hunter Water's near-term water planning work as well as longer term drought and water security work associated with the Lower Hunter Water Plan.

We provide details on our water demand modelling methodology, the integrated supply-demand planning model, in Technical Paper 7. Importantly, Hunter Water is constantly looking at ways of improving and refining our water consumption forecasts. Over the last two years we have developed a 'climate correction' methodology as a possible complement to our forecasting tools. This work is currently undergoing independent review as part of the governance processes associated with the Lower Hunter Water Plan. Hunter Water hopes to be in a position to describe this work, the outcomes of the review and any implications for our demand forecasts in the third quarter of 2019.

IPART's demand volatility adjustment mechanism effectively puts a cap on the extent of any over- or under-recovery of water sales revenue during the regulatory period – within a plus or minus five per cent dead-band. We discuss our water sales revenue and the triggering of the adjustment mechanism in section 2.

1.1.2 Financing costs

Under IPART's 2013 weighted average cost of capital (WACC) methodology, IPART set the WACC estimate based on a point in time calculation of the cost of debt. IPART's cost of debt applied a mid-point of the risk-free rate and debt risk premium using a current 40-day average and a ten-year daily trailing average. Hunter Water could enter into products to hedge for movements in the cost of debt during the regulatory period, but those financial instruments were more expensive and assumed that Hunter Water was in position to re-finance more than 50 per cent of debt immediately prior to each price determination.

IPART's 2018 WACC method introduced the concept of a trailing average during the regulatory period. IPART will update the current and long-term cost of debt each year in the regulatory period, adjusting regulated prices within the regulatory period or at the next regulatory period (see section 3).

IPART's new WACC method overcomes one of the key barriers to a longer determination period – refinancing risk and hedging costs. Hunter Water much prefers IPART's 2018 WACC to the earlier approaches to calculating the cost of debt. Our debt book is well-positioned to match IPART's assumed profile of re-financing during the next regulatory period.

We consider IPART's new approach for calculating a trailing average cost of debt is an important and material change to IPART's regulatory model – one that facilitates and validates a longer, five-year determination period.

1.1.3 Operating licence review

IPART must conduct an end-of-term review of Hunter Water's operating licence every five years.[4] IPART last reviewed our operating licence in 2016-17, resulting in a new licence for the period 1 July 2017 to 30 June 2022. Hunter Water understands that IPART will next review the operating licence in 2021-22 – meaning that our current licence will remain in place for the full five years.

Hunter Water would prefer to stagger IPART's price review and operating licence review. Conducting both reviews in the same year or within a year would not be ideal. Not only would it be difficult to resource from Hunter Water's perspective, it may not provide sufficient time to adequately and robustly consider any changes to the operating licence that then have expenditure impacts for the following price review. A five-year price determination period (2020 to 2025) and a five-year operating licence (2022 to 2027), repeated into the future, would be a good outcome in terms of sequencing of these major regulatory reviews.

[4] IPART may conduct the end-of-term review on a shorter cycle – for example, IPART's 2018-19 review of Sydney Water's operating licence occurred one year early.

2. Demand volatility adjustment mechanism

We have decided to consider at the next determination of Hunter Water's prices an adjustment to the revenue requirement and prices to address any over- or under-recovery of revenue over the 2016 determination period due to material variation between the level of actual water sales over the determination period and the forecast water sales used in making this determination.[5]

IPART's 2016 Final Report set out the details of a demand volatility adjustment mechanism should actual water sales depart from IPART's forecast water sales over the regulatory period. The mechanism is intended to protect customers should Hunter Water under-estimate demand and over-recover revenue. The mechanism also protects Hunter Water from downside risk where we over-estimate demand and under-recover revenue.

IPART's Final Report described a plus or minus five per cent dead-band across the four-year regulatory period, where incremental sales above or below the threshold may be adjusted in the following determination period. Hunter Water supported IPART's 2016 decision to reduce the dead-band from ten per cent to five per cent.

Hunter Water's water sales over the current regulatory period are likely to exceed IPART's 2016 demand forecast by more than the five per cent threshold. Table 2.1 shows Hunter Water's water sales based on two and half years of actual data and 18 months of forecast water sales. Hunter Water expects to earn $27.6 million in water sales revenue or an additional 5.2 per cent when compared against IPART's 2016 revenue forecast.[6] The incremental 0.2 per cent in water sales revenue above IPART's threshold equates to a total of $1.1 million.

Table 2.1 Hunter Water's water sales compared with IPART's forecasts, 2016 to 2020 ($millions, $2019-20)

Water usage sales ($2019-20)	2016-17	2017-18	2018-19	2019-20	4-year total
IPART 2016 Determination	130.7	132.0	133.1	134.0	529.8
HW actual/forecast	132.6	147.9	139.5	137.4	557.5
Variance $	1.9	15.9	6.4	3.5	27.6
Variance (%)	1.4	12.1	4.8	2.6	5.2

Note: Actual water sales for 2016-17, 2017-18 and first six months of 2018-19. Forecast waters sales for second six months of 2018-19 and 2019-20. Sales revenue excludes transfers to Central Coast Council.

Hunter Water was not aware of the likely triggering of the demand volatility adjustment mechanism when we finalised revenue and tariff modelling in early 2019. We did not make offsetting adjustment to the target water revenue requirement in the next regulatory period.

IPART's 2016 Final Report did not specify how the mechanism would work in practice, noting that:

to further improve regulatory certainty, we will consult as part of the next price review on how the volatility mechanism could be applied, if a material variation occurs.

Hunter Water supported IPART's demand volatility adjustment mechanism in 2016, and we support the use of the mechanism for future price determinations.

At the time of finalising this price submission, Hunter Water's water storage levels were below 70 per cent and the business was planning to implement water restrictions should total storages drop below 60 per cent.

[5] IPART, 2016, Hunter Water Price Review - Final Report, p.97.
[6] IPART's 2016 Determination accepted the four-year water demand forecast provided in Hunter Water's 2015 Price Submission.

The triggering of water restrictions would have an immediate impact on water sales revenue, reducing the level of any over-recovery across the current regulatory period.

Unlike water sales revenue, IPART's regulatory model for Hunter Water does not allow for any ex-post true-up of unbudgeted operating costs. Hunter Water is currently planning to implement a suite of drought-response measures that would be triggered at the same time as water restrictions. These costs could well exceed $5 million over six months. We discuss drought-related operating costs in section 4.

We do not have a firm view on the exact method for IPART to adjust Hunter Water's water revenue requirement in the next regulatory period if water sales exceed the five per cent threshold. Our preference would be for IPART to spread any adjustment over multiple years in an NPV-neutral way.

3. WACC – trailing cost of debt

IPART's 'Review of our WACC method 2018' made changes to the way IPART updates the cost of debt parameters in the WACC method.

IPART's 2013 WACC method calculated the cost of debt as the mid-point between the historic cost of debt and the current cost of debt – effectively placing an equal weighting on both when the 'uncertainty index' was within the tolerance band. IPART then set the revenue requirement and prices using this point in time estimate for the full regulatory period. Hunter Water considers that IPART's current approach is superior to the earlier method.

IPART's 2018 WACC method introduced a trailing average approach for both the long-term and current cost of debt – the risk-free rate and the debt risk premium. IPART considers that these changes *"serve the long-term interest of customers, as they should increase the accuracy of our approach and reduce the refinancing risk that regulated businesses face"*.[7]

IPART's 2018 trailing average approach for the cost of debt introduced the following specific changes:

- Adopted a 10-year trailing average approach to calculate the historic cost of debt, updated annually.
- Adopted a short-term trailing average approach to calculate the current cost of debt, updated annually, where the period of the trailing average equals the length of the regulatory period.
- Adopted consistent observation windows in calculating the historic and current costs of debt. Under the trailing average approach, IPART needs to sample annually for both historic and current cost estimates. To do this, IPART will use a subset of financial market data over a 40-day observation window each year, and give each regulated utility advance notice of the relevant dates.

IPART 2018 WACC method states that IPART will implement the trailing cost of debt approach at the start of each utility's next regulatory period. IPART's 2019-20 review of Hunter Water's price will be the first regulatory period under which the revised method applies. IPART will calculate the current cost of debt using a 40-day window, the same as the 2013 approach, as a starting point for calculating the trailing average.

IPART will divide the short-term debt into a number of tranches depending on the length of the regulatory period; for example, five tranches for a five-year regulatory period. In the second year of the regulatory period, IPART will assume that one-fifth of the current debt is refinanced for a further five years, using the same 40-day window. The same approach then applies in all future years – one-fifth of current debt refinanced for a further five years.

IPART will apply the same concept for the long-term cost of debt, assuming one-tenth of debt is refinanced each year after the starting year.

[7] IPART, 2018, Review of WACC method, p. 24.

3.1 Passing through annual changes to the cost of debt

IPART's trailing average approach for calculating the historic and current cost of debt will result in a different revenue requirement in each year of the regulatory period if there is any movement in the risk-free rate or debt risk premium.

IPART's 2018 WACC method considered two ways of adjusting revenues and prices, noting that either method would be net-present-value neutral for customers and the regulated utility:

- An annual update of prices to reflect the annual update to the cost of debt.
- IPART to apply a true-up to the regulatory revenue requirement at the next regulatory review, depending on the net movement in the cost of debt over each year of the previous regulatory period.

IPART's 2018 Final Report did not specify a preferred approach:

> *… we will decide whether to apply annual price adjustments or a true-up on a case-by-case basis, as part of our review process. In making this decision, we will have regard to any evidence the regulated firm or its customers put forward to support one approach or the other. Neither option would be a default.*[8]

At this time, Hunter Water does not have a preferred approach on the best way to adjust prices in response to movements in the risk-free rate and debt risk premium. We intend to set out a firm position and reasoning in our response to IPART's Issues Paper for this 2019-20 price review. We offer the following preliminary observations:

- The cost of debt has fallen dramatically since IPART set Hunter Water's revenue requirement in 2016: a WACC estimate of 4.9 per cent with a current cost of debt of 5.8 per cent and long-term cost of debt of 7.6 per cent. This price submission sets out a possible WACC of 3.5 per cent with a current cost of debt of 4.1 per cent and long-term cost of debt of 5.7 per cent (Technical Paper 6)
- The lower WACC and lower cost of debt reflect historic lows in Commonwealth Government 10-year bond yields, noting that the high cost of debt in the post-GFC years will drop out of IPART's 10-year trailing average in 2020.
- There may be a case to argue for an annual adjustment to Hunter Water's prices to moderate any bill impacts should the risk-free rate revert to the historic average over the next five or six years. In that instance, the revenue requirement at the next regulatory reset would be higher, all else equal, because of the higher WACC plus the impact of the true-up of higher debt costs during the preceding regulatory period.
- IPART determinations of Hunter Water's prices have locked in set prices in each year of the price path. Hunter Water adjusts those prices for movements in inflation, after advising IPART of the price changes – a simple, straightforward process. Introducing a cost of debt adjustment would add a degree of complexity to the process of adjusting price from 1 July of each year – an inflation and cost of debt adjustment.
- Hunter Water observes that many other network utilities face revenue caps rather than price determinations. In those instances, each utility has processes in place with the economic regulator to ensure prices are consistent with the legal determination.
- There may be difficulties explaining price movements to customers where the increase or decrease is driven by the risk-free rate and debt risk premium, as opposed to inflation increases only.

Hunter Water will assess a range of potential price and bill impacts under different cost of debt scenarios in our response to IPART's Issues Paper, noting that both approaches are NPV-neutral. This analysis will also look at Hunter Water's financial metrics under different cost of debt assumptions.

[8] IPART, 2018, Review of WACC method, p. 38.

4. Drought cost pass-through mechanism

IPART's December 2018 Submission Information Package includes a section on a potential cost pass-through mechanism, noting that IPART's 2016 price review resulted in a cost recovery mechanism for Sydney Water's drought response measures (Sydney Desalination Plant and Shoalhaven transfers).

IPART restates the circumstances when a cost pass-through may apply:

- There is a trigger event (to activate the cost pass-through), which can be clearly defined and identified in the price determination.
- The resulting efficient cost associated with the trigger event can be fully assessed including whether there are other factors that fully or partially offset the direct cost of the event.
- The resulting cost is assessed to exceed a materiality threshold.
- The regulated business cannot influence the likelihood of the trigger event or the resulting cost.
- The mechanism is symmetric in that it applies equally to both cost increases and cost decreases (in cases where the risk can result in both cost increases and cost decreases).
- It is clear that the cost pass-through will result in prices that better reflect the efficient cost of services.

IPART's 2016 Final Report recognised the potential benefits of a mechanism that enabled the recovery of drought-related costs:[9]

> *A cost pass-through mechanism would enable the additional costs associated with these measures to be passed through to customers (eg, via introducing an 'uplift' to the water usage price). This would make Hunter Water's drought response costs more transparent. It would also send a signal to customers about the marginal costs of responding to increased water scarcity.*

IPART invited Hunter Water to substantiate the case for a drought cost pass-through charge during the course of the 2015-16 price review. We were unable to do so at the time given the limited information available on the likely extent of unbudgeted costs during a drought event. IPART flagged that they would seek to apply a cost pass-through mechanism for Hunter Water's drought-response measures at the 2019-20 price review.

4.1 Drought characteristics

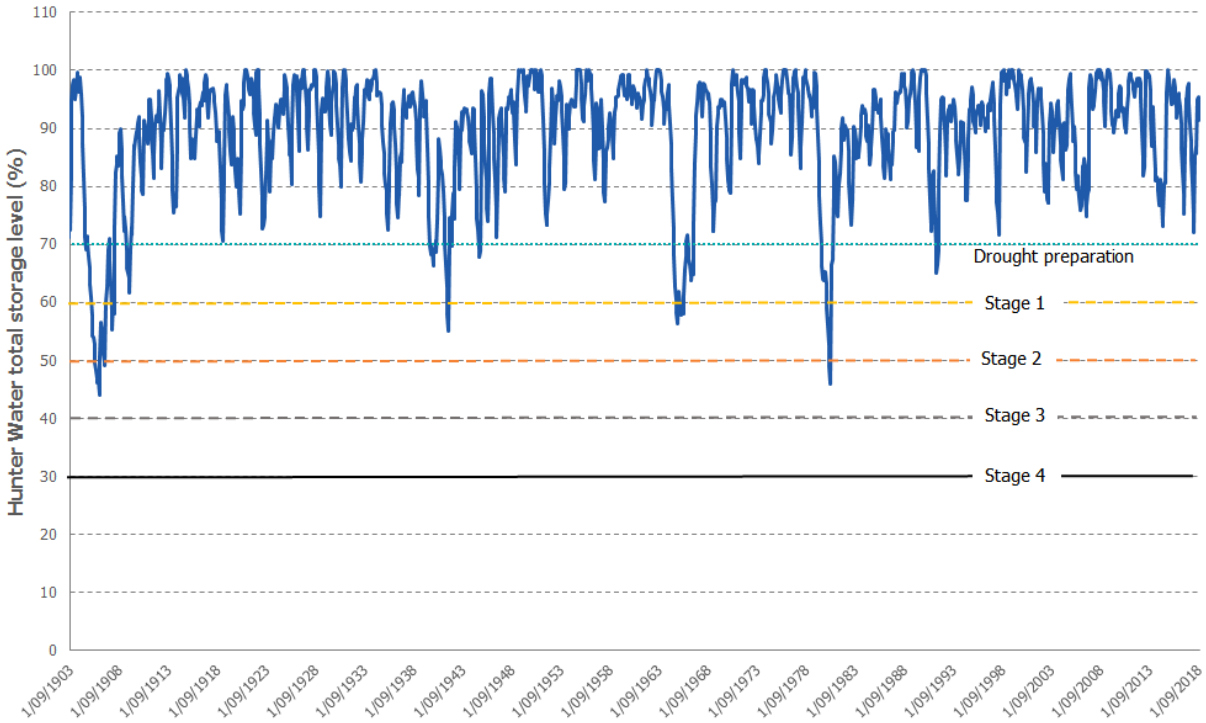
At the time of finalising this price submission, our overall storage level had fallen below 70 per cent and early phase drought response measures have been activated. Without substantial rain in coming months further measures, including water restrictions, will be necessary later in the year. These will remain in place – and tighten as necessary – until the drought breaks.

Under 'normal' conditions our current storages (with a capacity of just under 276.7 GL) yield around 76 GL per year, or 233 ML per day. This compares with an average consumption level of around 190 ML per day, increasing to 215 ML per day or more in summer months. In extended hot, dry periods this supply buffer can erode quickly and push the Lower Hunter into water scarcity. Managing this can imply significantly higher costs and lower revenues for Hunter Water. As the population in the Lower Hunter increases, the threat of scarcity grows.

[9] IPART, 2016, Hunter Water Price Determination – Final Report, p.102.

The following sections document some of the additional, unbudgeted costs that fall on Hunter Water as we mobilise for drought. Actual costs incurred will depend on the severity of the drought and the mix of response actions that is ultimately required. While future climate conditions are inherently uncertain, recent history provides some empirical information on drought conditions observed in our region. Storage modelling based on observed climate outcomes over the last 120 years or so is depicted in Figure 4.1. This shows how our current storage capacity and demand would be affected if we were to re-live past weather patterns.

Figure 4.1 Storage levels using past rainfall and current storage infrastructure



Source: Hunter Water (analysis of SILO climate data).

Recent history points to several occasions where our storages would be operating below 70 per cent, sometimes for a prolonged period. A more detailed analysis of past drought events and their likely implications for Hunter storages (if repeated today) is provided in Table 4.1.

Table 4.1 Duration of our drought program if past droughts were repeated today

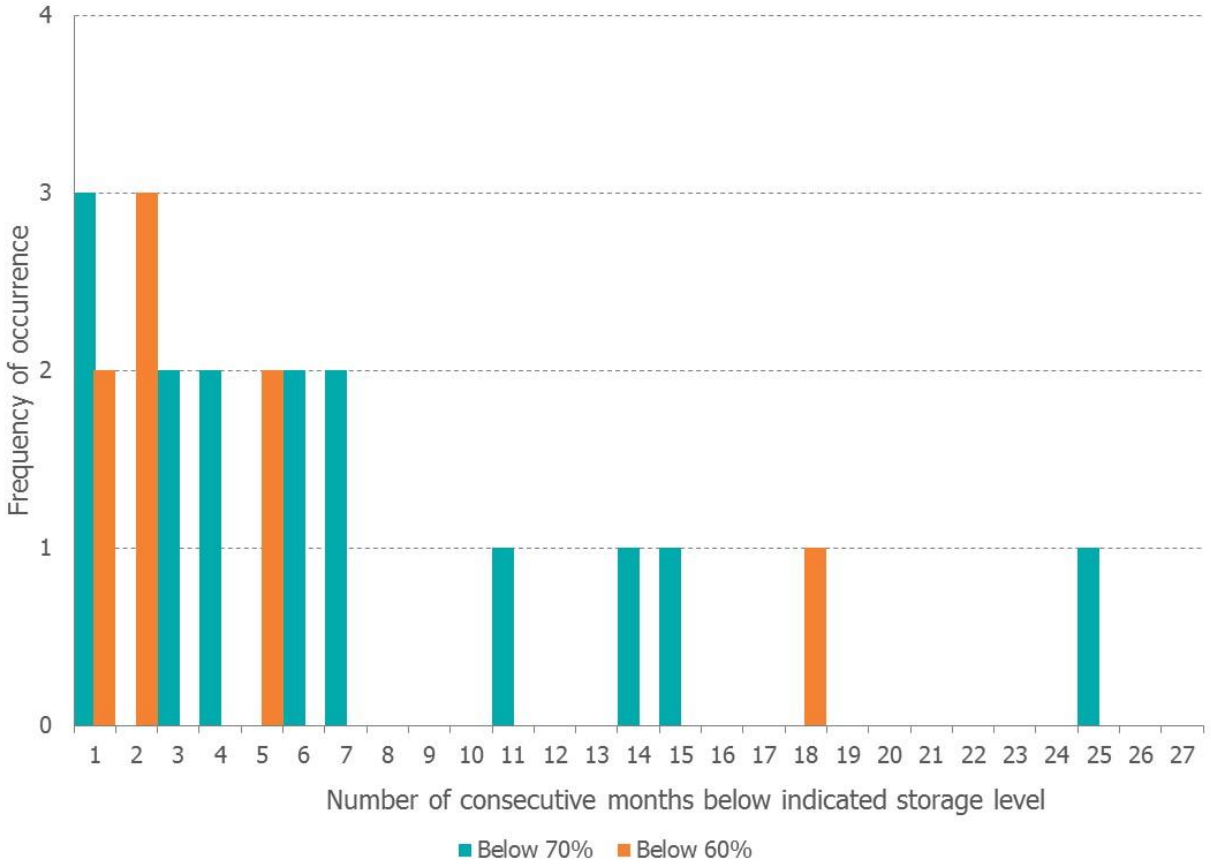
Drought characteristic	1906 drought	1942 drought	1965 drought	1980 drought
Preparatory (and exit) phase (70-60%)	7 months	2 months	15 months	11 months
Duration of Stage 1 (60-50%)	10 months	2 months	7 months	3 months
Duration of Stage 2 (50-40%)	8 months	-	-	2 months
Total period for which HWC storage would be operating below 70%	25 months	4 months	22 months	16 months
Minimum storage reached	44%	55%	56%	46%

A repeat of a major drought event suggests that Hunter Water could reasonably expect to be in drought response mode (i.e. managing storage levels below 70 per cent) for anywhere between 12 and 24 months. Under our drought response plan, each of these events is associated with higher supply and management costs for Hunter Water.

Figure 4.2 illustrates the impact that climate events observed since 1900 would have on the amount of time that our storages would be likely to be operating below 70 per cent of capacity. Analysis of the climate record suggests that there have been three occasions on which storages would have dropped below 70 per cent for one month before recovering and eight occasions where storages would be operating at less than 70 per cent capacity for between 2 and 7 months. There are four separate occasions where our storages would have been operating at between 60 and 70 per cent of capacity for between 11 and 25 months.

The current drought needs to be added to this record. We have already posted three months in the 60 to 70 per cent range, as at June 2019.

Figure 4.2 Frequency and duration of depletion events, 1900 to present



Source: Hunter Water analysis, based on 1900 to 2018.

The modelling implies (on a weighted average basis) that when storages levels drop into the 70 to 60 per cent range they would typically stay there for over seven months, and when they go below 60 per cent it will take them four months or more to rise above that level again.

These numbers translate into additional, unbudgeted costs for Hunter Water, with the risk that under severe drought conditions our operating costs would rise much higher.

4.2 Action triggered by falling storage levels

Hunter Water's drought response plan is explicitly linked to storage levels, and represents a hierarchy of actions that encompass supply supplementation and demand management. The triggers and measures are detailed in the NSW Government's 2014 Lower Hunter Water Plan and Hunter Water's Drought Response Implementation Plan.

Drought preparation and supplementation of our main water supply is initiated when our storage levels fall below 70 per cent. Additional (and higher cost) measures are activated if storage levels continue to fall. Recent work has provided clarity around the cost impacts of early stage drought response activities.

Key actions in our drought response effort are described in further detail below. These activities are part of our initial supply response when storages fall below trigger levels. They continue until storages recover or the measures are exhausted.

4.2.1 When storages fall below 70 per cent

A drop in storage levels below 70 per cent triggers an intensive period of planning, stakeholder communication and preparations for deeper measures, some of which involve long lead times. We also begin to access water from local aquifers and the Central Coast.

Key activities in the 60 to 70 per cent range include:

- Increasing purchases of water via the Central Coast pipeline, pending Central Coast water availability relative to our own, as per the transfer agreement.
- Reactivation of Tomago borefield pumping stations (these are brought progressively out of 'hibernation' when our main Grahamstown storage falls below 70 per cent capacity, and operated until Grahamstown recovers or 'cease to pump' limits are reached).
- Increased water efficiency and leakage reduction efforts.
- Progress planning, design and approvals for a temporary desalination plant at Belmont when storage levels drop to 65 per cent – in accordance with the Lower Hunter Water Plan.
- Commission public awareness campaigns encouraging voluntary savings efforts and informing stakeholders of measures and restrictions that may soon be required, and should be planned for.
- Increased management effort and coordination, including convening the Drought Response Senior Officers Group.

Central Coast transfers

Under the current transfer agreement, Hunter Water seeks water from the Central Coast when our storages fall below 70 per cent. The amount we can take or supply depends on Central Coast water availability relative to our own. This two-way transfer arrangement is depicted in Figure 4.3.

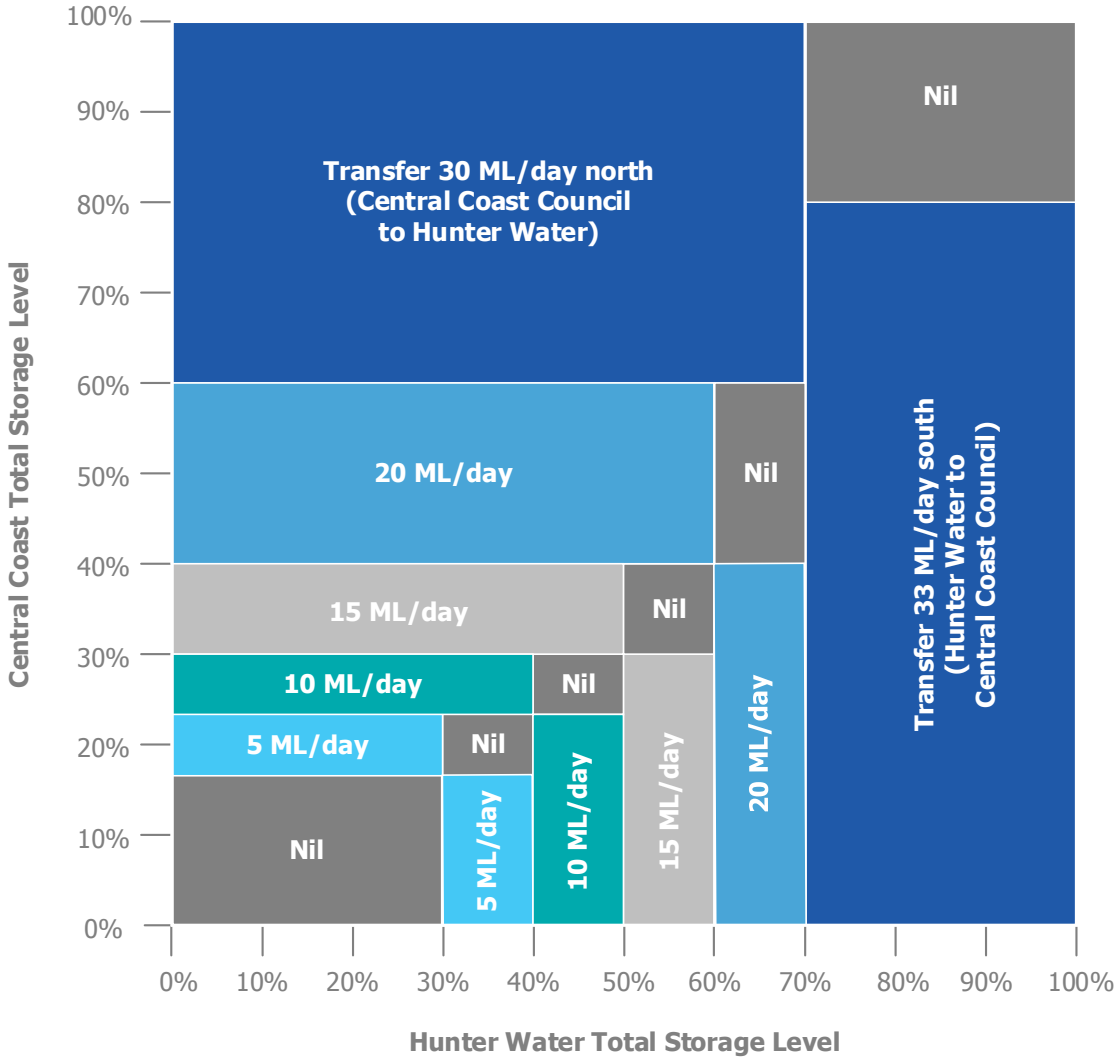
The price of water transfers between Hunter Water and Central Coast – as determined by IPART in May 2019 – is $0.70 per kL ($700 per ML, $2019-20).

Under the current transfer agreement Hunter Water could purchase up to 30 ML of water per day from Central Coast, as long as its storages remain above 60 per cent. If Central Coast storages fall to between 40 and 60 per cent, then Hunter Water purchases would be restricted to 20 ML per day. At levels between 20 and 30 per cent, Hunter Water can only purchase 10 ML per day. And if Central Coast storage levels are at 18 per cent or less, water transfers to Hunter Water are suspended.

Hunter Water's hydrological modelling of the two storage regions suggests that northward transfers of 30 ML per day could be continued for several months in the event of drought, though exact timeframes and flow availability is uncertain.

At present, capacity constraints associated with Central Coast storages limit northward transfers to 12 ML per day, but work on storage upgrades that would address this constraint. IPART's May 2019 Final Report for Central Coast Council approves funding for the capital works for the Mangrove Creek Dam spillway upgrade and the Mardi to Warnervale pipeline upgrade. With this investment, the transfer planning limit should increase from 12 ML per day to 30 ML per day (northward) within the next few years.

Figure 4.3 Water transfers under Hunter-Central Coast pipeline agreement



Taking water from our borefields

The borefields are operated in conjunction with storage levels at our major reservoir, Grahamstown Dam. When Grahamstown Dam drops below 70 per cent full, the Tomago sandbeds are called on to supplement regular supply at a rate of up to 75 ML per day. This is maintained until the 'cease to pump' limit is reached, in line with environmental constraints.

Our supply costs for water from the borefields are about double those that currently apply to our main Grahamstown source. Pumping, treatment and sampling costs for Tomago bore water are estimated at just over $91 per ML versus $44.80 per ML for supply from Grahamstown (at current prices). Calling on the borefields to help address depletion of our main catchment would add around $46.30 per ML to the marginal cost of supplying potable water to our customers.[10]

[10] Network distribution (ie. pumping) costs would be additional to these source-dependent supply cost estimates.

The costs of reactivating the borefields after an extended downtime are also relevant. We estimate about $400,000 a year is spent on borefields maintenance, with around 64 per cent of this being spent on the Tomago borefields (which are effectively kept in standby mode). We estimate that bringing the Tomago borefields up to full operational status might involve an overhead of 50 per cent or more for that year – a one-off reactivation cost of around $130,000.

End-use efficiency improvement and leak reduction

We accelerate and expand water efficiency and leakage reduction programs in response to worsening drought conditions.

We are currently rolling out various water efficiency programs:

- Water Efficiency Management Plans – these currently focus on large water customers and support water audits and actions aimed at improved water efficiency.
- Find 'n Fix programs - involving data logging and analytic activity aimed at identifying and correcting excessive water consumption.
- Plumb Assist – this program supports the plumbing needs of households experiencing financial hardship, who would otherwise be deterred from correcting problems with high levels of water wastage.

Falling storage levels would prompt activity focused on the potential for equipment rebates (focused on promoting uptake of water saving devices) and water tank tune-ups.

The drought activities currently underway at Hunter Water are expected to add around $0.6 million for preparation of these measures, and expanded roll out over a six-month period.

Detailed design of a temporary desalination plant

Under the Lower Hunter Water Plan, Hunter Water has committed to begin detailed planning for a temporary desalination plant in Belmont. This work commences when our storages fall to 65 per cent, and targets a construction start at 35 per cent. The plant would be switched off when storages rise again past 35 per cent.

Since 2014, Hunter Water has incurred a range of costs to enable this process and timetable:

- Long-list screening of 9 sites down to four sites ($100,000)
- Site selection shortlist study ($300,000 consultancy plus $100,000 internal management costs), and
- Environmental Impact Statement, including concept design, necessary for planning approval ($1.2 million consultancy plus $200,000 internal project management costs).

These expenditures clear the way for detailed design to get underway, as required. Costs of detailed design activity (triggered at 65 per cent storage) would entail:

- $2.9 million in consultancy fees, and
- $1.6 million in project management costs and contingencies.

This implies $4.5 million of additional operating costs for Hunter Water as storages move below 65 per cent. In the event that the 35 per cent storage threshold was not reached, the detailed planning and EIS is likely to have an effective shelf life of around five years. After this time, the plan is likely to require a major refresh, at an indicative cost of around 60 per cent of the original spend.

Public awareness, stakeholder management and coordination

Information and coordination are essential to achieving an effective drought response. Drought preparation will involve an expanded community engagement effort (including media campaigns) and greater stakeholder management and coordination.

Hunter Water is gearing up to boost drought awareness and responses within the local region, with a significant increase in spending envisaged. Encouraging households and bigger users to voluntarily rationalise their water use can be an efficient way of achieving a lower consumption outcome – if the message cuts through and elicits broad support. Messaging and updates also prepare the community for more stringent measures (including mandatory targeted restrictions) should these become necessary.

Higher levels of coordination and administrative effort is required in the drought preparation and implementation stages. Hunter Water estimates that an additional $1.1 million will be required over the next six months for these activities if drought conditions do not abate. This includes extra staffing and advertising costs totalling around $90,000 per month.

4.2.2 When storages fall below 60 per cent

Stricter actions are ramped up as storages fall below 60 per cent. Measures such as bore fields take off and piping water from the Central Coast are maintained for as long as supply is available. Deepening restrictions on the demand side, aimed at reducing and rationing potable water consumption, are likely to play an increasing role until storages begin to recover.

The mix and rapidity of deployment of measures would depend on the severity and extent of a future drought. Relevant questions include:

- How would it affect the supply capacity of Central Coast storage?
- What water is available from our aquifers?
- What other changes in technology or regulatory arrangements would impact the effectiveness of our supply response?

Hunter Water's current drought preparations are providing clarity over key early stage cost components. These help provide an indicative – though incomplete – picture of the extra costs that Hunter Water would bear as a drought progressed. Unit cost and capacity estimates for key actions are presented in Table 4.2. Supplementation measures such as accessing bore water or Central Cost storage are among the least cost measures available to us (on a dollar per ML basis). If and when these are depleted, the cost of actions to address water scarcity is likely to rise beyond the net figures indicated. Estimates for other measures (such as end-use water efficiency programs) are more tentative and sourced from our Drought Response Implementation Plan, which is subject to continuous refinement and update.

Initiation costs include the cost of recommissioning, contract development and stakeholder engagement. In practice, enhanced engagement, messaging and monitoring costs are likely to apply across all stages of our drought response. The table focuses on the additional cost of measures (e.g. water supplementation costs are net of the business as usual cost of sourcing water from within Hunter Water storages), and assumes that Central Coast infrastructure upgrades take effect, thereby enabling northward transfers of up to 30 ML per day.

Table 4.2 Estimated extra cost and contribution of additional measures (2019-20 prices)

Drought measures/ enhanced activity [1]	Storage level: 70-60%			Storage level: 60-50%	
	Initiation costs	Contribution ML /mth	Cost $/ML [2]	Contribution ML /mth	Cost $/ML [2]
Borefields supplementation	$0.1m	2,220	$46.3	2,220	$46.3
Central Coast transfers (assume dam upgrade completed)		900	$583	900	$583
Enhanced water efficiency & leak reduction measures	$0.3m	60	$3,000	60	$4,000
Detailed design and development of temporary desalination plant	$0.1m	Estimated spend of $4.5m on detailed design & project readiness			na
Enhanced communication, planning, program support and stakeholder engagement (including restrictions preparation & Stage 1 implementation)	$0.2m	Estimated enhanced communications and management spend of approx. $90,000 per month			na

Notes:
1. Assumes an average of 30 days per month.
2. Incremental to business as usual.

These cost parameters translate into indicative drought response uplift costs presented in Table 4.3. The cost estimates presented draw on the historical climate record and storage modelling as a guide to the feasibility of future drought periods. They are likely to give a conservative estimate of the additional costs we would incur during a substantial drought period because:

- They are a subset of all measures likely to be implemented at each stage
- Water supplementation and efficiency measures are assumed to deliver at their maximum level over the full period required, and
- They tend to be low cost measures, and are deployed first.

The unbudgeted operating costs would have a material impact on Hunter Water. Over six months, they would add around $7 million to our costs, and this would grow to over $26 million if storages remained below 70 per cent for a two-year period (even if the need for deeper and more costly measures was avoided). We recognise that while increasingly stringent and prescriptive water restrictions would be implemented at relatively low cost from an operational perspective, their potential cost to consumers can be many times greater.

Table 4.3 Estimated extra cost and contribution of additional measures

Drought measures/ enhanced activity	Period measure is operating [1] (assumes stable unit costs & output across 70-50% storage range)			
	6 months	12 months	18 months	24 months
Borefields supplementation	$0.7	$1.3	$2.0	$2.6
Central Coast transfers (assume upgrades completed)	$3.1	$6.3	$9.4	$12.6
Enhanced water efficiency & leak reduction measures	$1.6	$2.8	$4.1	$5.3
Detailed design and development of temporary desalination plant	$1.0	$4.6	$4.6	$4.6
Communication, planning, coordination and stakeholder engagement	$0.7	$1.3	$1.8	$2.4
Total cost increase	$7.0	$16.0	$21.4	$26.7

Notes:
1. Assumes stable unit costs and output across storage level range 70-50%.

4.3 Economic level of water conservation

Hunter Water's 2017-2022 Operating Licence introduced new requirements for water conservation, including an obligation to submit for IPART's approval a methodology for determining the economic level of water conservation (ELWC). The ELWC methodology covers three elements: water leakage, water recycling and water efficiency, including demand management.

Hunter Water submitted an ELWC methodology to IPART in January 2019. IPART subsequently approved the methodology, subject to Hunter Water setting the 'value of keeping options open' component to zero, pending possible further work in this area.

Hunter Water must submit a Water Conservation Work Program using the ELWC methodology by 1 September 2019. The program must set out, for the following five-year period, Hunter Water's strategies, programs and projects relating to water leakage, recycled water and water efficiency. The program must also include Hunter Water's water conservation objectives, targets and timetables, and explain how the elements of the water conservation work program align with the ELWC methodology.

Hunter Water's ELWC methodology is based on comparing the levelised costs of water conservation activities against the marginal value of water saved. The methodology sets out three values for water saved depending on the durability of water savings associated with a specific initiative: short-run, intermediate and long-run estimates. The short-run value of water takes into account storage levels and the probability of triggering further drought-related actions. Our estimates includes direct water supply costs, a drought-response cost (based on temporary desalination costs) and scarcity values reflecting customer welfare losses when water restrictions are in place. Our short-run values, as provided to IPART, are shown in Table 4.4.

The short-run value of water escalates quickly once water storage levels fall 70 per cent: $3.48/kL below 70 per cent, $8.23/kL below 60 per cent and $8.23/kL below 50 per cent. This reflects the increasing likelihood of triggering water restrictions and drought-response measures. The higher values justify higher cost water savings measures across the business, although the price of water charged to customers would remain the same.

Hunter Water is currently preparing detailed assessments of candidate water conservation initiatives as part of drought-response planning, looking at the full range of leakage, water efficiency and water recycling initiatives. These ELWC assessments will form the basis of our Water Conservation Work Program for 2018-19 and the following five years.

Table 4.4 Estimated short run value of water under increasing scarcity

Drought response phase	Water storage level	Short run value of water ($/kL)
BAU efficiency enhancement	100 to 80%	$0.45
BAU efficiency enhancement	79.9 to 70%	$0.47
Drought preparation	69.9 to 60%	$3.48
Stage 1 response	59.9 to 50%	$8.23
Stage 2 response	49.9 to 40%	$17.97
Stage 3 response	39.9 to 30%	$35.23
Stage 4 response	Below 30%	$46.34

Source: Hunter Water's Economic Level of Water Conservation Methodology, January 2019, p.18.

4.4 Assessment against IPART's cost pass-through criteria

Hunter Water's operating expenditure proposal (see Technical Paper 5) does not include any allowance for the funding of water conservation initiatives beyond business-as-usual water conservation work. We have assumed 'average weather conditions' over the next regulatory period, where our water storage levels stay above 80 per cent for the full five-year period.

Hunter Water welcomes IPART's invitation to develop a drought cost pass-through mechanism. As a vertically-integrated water utility, one our key exposures, if not the main one, is the movement in costs and revenue related to rainfall, water sales and drought-response measures. Our IPART-approved ELWC methodology effectively sanctions additional expenditure on water conservation measures as storage levels fall. Under IPART's existing regulatory framework, there is no way for Hunter Water to recover those costs as the short-run value of water increases beyond business-as-usual levels.

The purpose of this section is to describe the type and extent of unbudgeted operating costs we are likely to incur if storages fall below certain threshold levels. We have better information on our likely drought-response costs, and greater management attention on possible responses, given the fall in our storage levels over the last 12 months. Our water storages are currently below the levels last experience in the early and mid-2000s.

Hunter Water recognises that IPART has established criteria for assessing any cost pass-through event. IPART would need to approve any drought-response costs and draft a legally-binding methodology that would allow the recovery of any approved costs.

Hunter Water is working on a possible drought cost pass-through mechanism that addresses and satisfies all of IPART's cost pass-through criteria. We are aiming to provide IPART with details on triggers, specific costs, materiality and proposed cost recovery arrangements prior to IPART's expenditure review and the release of IPART's issues paper for the 2019-20 price review.

5. Efficiency carryover mechanism

IPART's 2016 Final Report introduced the concept of an 'efficiency carryover mechanism' for the first time. The mechanism puts in place an additional incentive for the regulated utility to find and implement operating cost savings throughout each year of the regulatory period.

IPART's mechanism is similar to the efficiency sharing schemes applied by other economic regulators in the water and electricity sectors. IPART recognised that the regulated utility earns a greater reward for making savings in the early years of a price period, as they enjoy the saving in each of the remaining years as additional profit. The utility earns additional returns until IPART resets the operating cost allowance at the start of the following regulatory period. A utility that makes a saving at the start of the last year of the price period will only enjoy that benefit for one year.

IPART proposed an efficiency carryover mechanism whereby the utility gets to retain the benefit of the permanent cost saving for the length of the regulatory period. For example, if the utility makes the permanent saving in the third year of a four-year regulatory period, IPART would allow the utility to recover that cost saving for an additional two years in the next price path – four years in total.

Hunter Water supported IPART's proposed efficiency carryover mechanism in the 2015-16 price review. IPART's mechanism is relatively straightforward. The carryover applies to all of Hunter Water's regulated operating expenditure and is one-sided in that the scheme rewards permanent cost reductions and does not penalise cost increases.

Hunter Water's operating expenditure will exceed IPART's 2016 operating cost allowance in three of the four years of the current price period (see Technical Paper 5). Hunter Water spent less than IPART's allowance in 2016-17 (-4.7 per cent), but has spent more than the allowance in 2017-18 (5.5 per cent) and 2018-19 (7.7 per cent). Hunter Water expects to spend $156 million in 2019-20, or $11.2 million more than IPART's 2016 allowance. On that basis, Hunter Water has no claim under IPART's efficiency carryover scheme for the current regulatory period.

IPART's 2018 Submission Information Package invites Hunter Water to comment on the merits of expanding the current efficiency carryover scheme to include capital expenditure. Hunter Water addresses this question in Part B (Section 2.4) of this technical paper: 'a roadmap for modernising regulation'. We discuss a broader range of possible incentive mechanisms for promoting cost and service improvements, examine developments in other jurisdictions, and suggest that IPART set aside a period of time to undertake a comprehensive assessment of alternative techniques, including some form of total expenditure scheme.

6. Price flexibility

IPART's 2016 Determination introduced the concept of price flexibility or unregulated pricing agreements. IPART allowed Hunter Water and large non-residential customers to enter into voluntary pricing agreements for water and wastewater services:

> *This form of pricing flexibility would allow Hunter Water to search for opportunities to uncover value for its customers by tailoring prices, and potentially services, to better reflect their individual preferences, just like in a competitive market. This would encourage Hunter Water to engage with its customers to develop mutually beneficial price offers, specifically targeted to individual customers' preferences.*

IPART defined a large customer as a standalone, non-residential customer consuming more than 7.3 megalitres of potable water per annum – the equivalent of 20 kL per day.

6.1 Implementing unregulated pricing agreements

IPART's 2016 Final Report noted that where a large non-residential customer choose to enter a pricing agreement with Hunter Water, the customer would no longer be subject to IPART's determined prices for the water and/or wastewater services included in the agreement. IPART's 2016 Determination does not allow either party to opt back into regulated prices while the pricing agreement was in place, unless the agreement provides an explicit right to do so.

IPART recognised that a future Tribunal could remove the unregulated pricing agreement mechanism from future price determinations. IPART considered that this risk could be mitigated, to some extent, by aligning the pricing agreement dates with Hunter Water's price determinations.

6.2 Impact on revenues and costs

IPART's 2016 Final Report explained how price flexibility would be factored into re-setting expenditure allowances at future price reviews. IPART would require Hunter Water to 'ring-fence' any changes in costs resulting from unregulated price agreements. If an agreement resulted in lower costs, IPART indicated that Hunter Water would have an incentive to record and report this to IPART, ensuring IPART does not mistake this amount for an efficiency saving. If an agreement resulted in higher costs for Hunter Water, IPART would have an opportunity to review this as part of the expenditure review.

6.3 Hunter Water's position

Hunter Water had not entered into any unregulated pricing agreement at the time of finalising this price submission (June 2019).

Hunter Water has considered, at a high level, the potential for various unregulated pricing agreements with a small number of large business customers over the current regulatory period. Hunter Water did not enter into any formal or informal negotiation process with these customers.

Hunter Water supports retaining the option for unregulated pricing agreements in IPART's next determination for Hunter Water, including the requirement to ring-fence costs and report publicly on each agreement. We accept that a negotiated agreement would need to deliver some form of revenue improvement or lower costs for both parties. We would also need to consider the legal and administrative costs of executing such an agreement when assessing the extent of net benefit to be shared between the two parties.

6.4 Water sales to the Central Coast Council

Hunter Water's submission to IPART's 2018 Issues Paper for the review of Central Coast Council's prices proposed the setting of the transfer price at the higher of the short-run marginal cost of water of the two utilities. Hunter Water argued this position for three reasons:

- Hunter Water and the Central Coast Council (former Gosford and Wyong Councils) have made considerable investments in pipeline infrastructure to allow the transfer of water between utilities during drought conditions, subject to thresholds and triggers set out in the 2006 pipeline agreement. The pipeline agreement results in a material improvement in the system yield of both utilities, assuming that flows occur in accordance with the storage triggers.
- Setting the transfer price above the short-run cost of water introduces a financial barrier to transferring water during drought conditions, as IPART does not currently provide a financial allowance for either party to recover unbudgeted operating costs.
- Both utilities are working together on the next iteration of long-term water security plans. IPART's method for setting water transfer prices should not limit the scope for a joint approach to meeting supply requirements between the inter-connected regions.

IPART has made a separate, three-year determination of the transfer price between the two utilities, leaving the regulated transfer price constant in nominal terms ($0.69 per kL in $2018-19).

Hunter Water notes that IPART has provided Central Coast Council with the legal ability to enter into an unregulated pricing agreement with Hunter Water, similar to the price flexibility provision in Hunter Water's current determination.

Hunter Water supports IPART's decision, recognising that the arrangement provides the option, not obligation, to voluntarily negotiate the transfer price between the two regions over the next few years.

7. Abbreviations

Acronym	Term
ELWC	Economic level of water conservation
GFC	Global financial crisis (which emerged in late 2008)
IPART	Independent Pricing and Regulatory Tribunal (NSW)
kL	Kilolitre (ie. 1,000 litres)
ML	Megalitre (ie. 1,000,000 litres)
WACC	Weighted average cost of capital

8. References

Department of Finance and Services (NSW) (Water Directorate), 2014, **2014 Lower Hunter Water Plan,** Sydney, NSW.

Hunter Water, 2019, **Economic Level of Water Conservation Methodology**, Hunter Water Corporation, January, Newcastle.

Hunter Water, 2018, **Economic Level of Water Conservation Methodology,** Discussion Paper, Hunter Water Corporation, September, Newcastle.

IPART (Independent Pricing and Regulatory Tribunal (NSW), 2018, **IPART's Review of Hunter Water Corporation's prices from 1 July 2020 - Submission Information Package**, Unpublished letter to Hunter Water, November, Sydney.

IPART, 2017, **2017-22 Operating Licence – Hunter Water**, This document also contains also contains the **Customer Contract** (beginning page 23). Sydney

IPART, 2018, **Review of our WACC method**, Final Report, February, Sydney.

IPART, 2016, **Review of prices for Hunter Water Corporation, From 1 July 2016 to 30 June 2020**, Water – Final Report, June, Sydney.

IPART, 2013, **Review of WACC Methodology,** Research – Final Report, December, Sydney.

PART B

A ROADMAP FOR MODERNISING REGULATION

1. The need for a regulatory roadmap

Hunter Water sees considerable merit in developing a roadmap outlining a process and timeline to update the regulatory framework applied by IPART to the NSW metropolitan water utilities.

A regulatory roadmap would allow systematic consideration of key changes in the operating environment, customer preferences and best practice regulation; facilitating the development of reforms to 'modernise' the regulatory framework.

Hunter Water's 2017+3 Strategy sets out some clear strategic priorities:

- Lead the water industry in efficiency and productivity
- Provide great services to our customers, consumers and community
- Enable good urban development, and
- Realise the benefits a digital utility can provide.

We are always looking for ways of delivering outcomes our customers want and value. IPART's regulatory model should recognise our regulatory and licensing obligations, but also facilitate interaction and feedback between the regulated utility and the customers paying for regulated services. That should be a constant two-way process.

Hunter Water has observed that IPART's current approach results in timing and resourcing constraints that limit the consideration of substantive changes to the regulatory model. A well-developed and sequenced 'roadmap' would allow IPART the time and opportunity to consider, engage on, develop and implement regulatory changes in a number of key areas.

This paper sets out the need for a regulatory roadmap, discusses the key issues that could be addressed in a regulatory roadmap and suggests a way forward. This section begins by defining a regulatory roadmap, before discussing the case for change.

1.1 What is a regulatory roadmap?

We envisage a 'regulatory roadmap' as a process for systematically addressing key elements of the regulatory framework to ensure it remains best placed to achieve the NSW Government's objectives.

This roadmap would identify key elements of the regulatory framework which could usefully be addressed, and propose how these might be grouped and prioritised. This would enable systematic consideration of each group of issues in turn, making best use of available resources to identify regulatory reforms likely to promote the achievement of regulatory objectives.

Critically, we see this process as taking place outside of individual price reviews.

1.2 Why do we need a regulatory roadmap?

A number of factors demonstrate the urgent need for a regulatory roadmap to develop the regulatory framework for the urban water sector in NSW:

- It is important that the regulatory framework continue to evolve
- It is difficult to adequately address framework issues within individual price reviews, and
- It would provide clarity to stakeholders and reduce the regulatory burden.

The following discussion explains these imperatives.

1.2.1 It is important that the regulatory framework continue to evolve

While in Hunter Water's view the current economic regulatory framework is largely sound, without a mechanism for review there is a risk that IPART's regulatory framework will not be fit-for-purpose in the face of emerging challenges in the water sector.

These challenges include population growth, climate change, drought, major asset renewals/upgrades, expectations around environmental outcomes and changing customer values (including broader liveability expectations). At the same time, significant changes are occurring in the operating environment and market structure with the emergence of alternative suppliers.

IPART's approach to the economic regulation of water utilities has not changed substantially in the past 20 years, although IPART is more exact and precise in the way it measures and sets the various building block components and individual tariffs.

Hunter Water considers it good practice for the economic regulator to step back and look at bigger picture lessons from other sectors and jurisdictions – to look at how best practice regulation is evolving. When compared to the approaches adopted by other regulators, IPART's approach:

- Allows for limited customer engagement in formulating services and prices
- Provides relatively low-powered incentives under a traditional building block approach
- Gives the regulated businesses limited discretion in tariff setting, and
- Relies heavily on a detailed assessment of inputs, including demand and costs.

While some other regulators have undertaken an overall 'step-back' review of their approach to regulation, IPART has tended to examine individual elements of the regulatory framework during price reviews, in addition to reviewing some specific elements outside price reviews (see WACC special review below).

1.2.2 It is difficult to adequately address framework issues within individual price reviews

The current rolling four-yearly price review cycle creates a significant resource burden for all parties involved. It does not create enough time or opportunity for IPART or Hunter Water to engage on updates and improvements to the regulatory model.

IPART has implemented small incremental changes to the regulatory framework; namely price flexibility and the operating cost efficiency carryover scheme during the 2016 price reviews for Sydney Water and Hunter Water. But we question whether IPART is able to fully consider the interactions between various elements of the framework.

A separate comprehensive process would enable IPART, regulated businesses or others to put forward proposals for changes to the regulatory framework and for more far-reaching reform options to be at least considered.

IPART's 2017 special review of its weighted average cost of capital (WACC) methodology (see Box 1) was an excellent example of taking the time to revisit the objective, theory and practice of a key regulatory parameter and engage with stakeholders outside the time critical price review process.

Box 1: IPART special review of WACC methodology

IPART undertook a special review of its standard method for determining the weighted average cost of capital (WACC) from July 2017 to February 2018. The WACC is an important aspect of IPART's pricing decisions which use the building block approach to estimate the required revenues, including the return on assets, by multiplying the asset base by the WACC.

While IPART's methodology had been broadly accepted by stakeholders, IPART considered it timely after five years to review its approach, with the aim of improving its accuracy and predictability.

IPART's review process involved calling for submissions from key stakeholders and the holding of a public forum.

Feedback from stakeholders broadly confirmed that the existing WACC method was working well, and IPART therefore maintained key elements of the 2013 Method. However, IPART made several incremental improvements to improve its overall accuracy, transparency or predictability. As noted by IPART, maintaining the stability, certainty, replicability and predictability of the WACC method has been an important factor in supporting an investment-grade credit rating for some of the regulated water businesses.

The incremental changes made were viewed positively by the market. The credit rating outlook of some businesses was improved by the rating agencies specifically on the basis of the improvements to the WACC methodology.

A roadmap which enabled potential changes to the regulatory framework to be considered outside of the constraints of a price review would also facilitate more streamlined price reviews focused around the proposed services and associated expenditures. This would reduce the regulatory burden on businesses, IPART, and other stakeholders.

The benefits of undertaking reviews of the regulatory framework outside of formal price reviews has been recognised by a number of other regulators including Ofwat in the United Kingdom, the Essential Services Commission (ESC) in Victoria, the Essential Services Commission of South Australia (ESCOSA), the Australian Energy Regulator (AER) and the New Zealand Commerce Commission (NZCC). The framework review processes adopted by each of these regulators is summarised in Table 1.1 (more detail is provided in Attachment A). Once established, regular reviews of methodology have become embedded into a cycle whereby a formal ex-post assessment of a price review leads into the next review of the underlying framework.

Table 1.1 Approaches to review of regulatory frameworks adopted by other regulators

Regulator	Drivers for review	Review process overview	Key issues identified	Key outcomes
Ofwat	Routinely reviewed as part of their price determination process	Two-year review process, including three rounds of consultation	Affordability for customers, opportunities to improve previous changes to risk and return	Strengthened customer engagement throughout process, new customer-based pricing incentives and changes to WACC methodology
ESCOSA	To improve a framework still in its infancy, and match consumer engagement achieved elsewhere	Two-year process, starting with review of previous pricing determination immediately after implementation, and two rounds of consultations	Lack of customer engagement, and information asymmetries between stakeholders	Negotiation Forum during price determination and greater coordination with other regulators
ESC	Legislative change giving ESC greater discretion with framework design	18-month process, starting with extensive initial consultation and a rapid turnover between draft and final positions	The need for a simpler regulation process and improvements in the way water businesses engage with customers	Extensive customer engagement required and the PREMO incentive mechanism
AER	Legislative requirement to conduct reviews before any price determination	Six months from announcement of review process to final position, including one consultation period after draft position	Need for greater focus on customer outcomes, and provisions for outcomes of contingent projects	Maintained price controls used historically and introduced new incentive schemes
NZCC	Required by legislation to conduct reviews every seven years	Two-year process, with three rounds of consultations and fast-tracking of specific issues into current price determination	Uncertainty on new technologies and disincentives from previous regulatory framework	Improving access to custom price paths, reducing existing asset lives, pure revenue caps and greater submission flexibility

Hunter Water sees merit in the approaches adopted by these other regulators. Many of the detailed issues around building blocks, pricing and regulatory measures are resolved early, with the economic regulator publishing a statement of approach or methodology some time before the price review.

This would simplify the price review process, allowing the economic regulator to take a proportionate approach to a business's price review based on the quality of the submission, the movement in capital and operating expenditure and the extent of meaningful customer engagement, including the way the business incorporates customer expectations around asset performance, service levels and ways of interacting.

1.2.3 Defined review agenda and process would provide clarity to stakeholders and reduce regulatory burden

In its past price review decisions IPART has flagged some issues it would like to address in the future. However, this is not within the context of a clearly defined and prioritised work program. For example, while IPART has flagged that it intends to work with regulated businesses and regulators in other jurisdictions to develop a performance benchmarking capability, it is not clear what process this will entail.

A more clearly defined program would enhance the ability of regulated businesses and other stakeholders to prepare and constructively participate in reviewing elements of the regulatory framework.

2. Potential issues to be addressed in regulatory roadmap

This section considers the issues that could be meaningfully addressed in the regulatory roadmap. It suggests the criteria and process for identifying issues to be considered in a roadmap, before discussing a series of issues we consider would benefit from consideration within a regulatory roadmap framework. For each of the issues we outline the current practice and scope for improvement, before describing relevant precedent and key issues for discussion.

2.1 Criteria and process for identifying issues

There are a wide range of issues that could be evaluated in a roadmap. Stakeholders are likely to have diverse views about the importance of issues and the way they should be addressed. It is therefore important to systematically identify, prioritise and group the issues for consideration at each stage in a logical way.

In Hunter Water's view the roadmap should reflect an industry-wide view of priorities. However, it should be flexible to accommodate new issues as they emerge. We present a process that could be used to generate this industry-wide view of priorities in the next section.

In considering which issues to prioritise for the roadmap we propose the following criteria:

- Benefit: What is the potential magnitude of the risk-adjusted net benefit associated with addressing the issue?
- Relevance: Is the issue of wider relevance for the industry, rather than just affecting one business?
- Complexity: Is the issue too complex/ have too many interactions to be able to be comprehensively addressed in the context of a price review?

Hunter Water's has identified five groupings:

- Economic regulator giving greater weight to the customer and community engagement that informs expenditure proposals
- Linking performance standards and prices
- Driving cost and service improvements
- Setting tariff structures, and
- More cost-effective environmental regulation.

We emphasise however that this is just our initial view. The identification and prioritisation of issues should reflect broad consultation with all stakeholders, as we discuss in Section 3.1. Our purpose here is to commence a discussion of the types of issues that should be addressed, rather than propose specific solutions.

2.2 Improving customer and community engagement

What should be the approach to customer engagement in the NSW water industry?

Ensuring customers can effectively give voice to their preferences is fundamental to achieving the key regulatory objective of protecting the long-term interests of customers. Effectively engaging with customers and other stakeholders can be a challenge given the diverse and dispersed customer base, rapidly evolving customer and community expectations and the limited resources available to many customers and community organisations.

2.2.1 Current practice and scope for improvement

At present IPART provides limited guidance to water utilities on its expectations regarding customer and community engagement. Water businesses routinely engage with customers on an ongoing basis, with particular emphasis on ensuring customer feedback is reflected in their pricing submissions.

It is not clear if formal hearings and submissions are the best way of engaging with customers. For example, the Public Interest Advocacy Centre (PIAC) has stated that it considers consumer workshops, ideally deliberative forums, to be the most important method of consumer engagement. This is because water pricing proposals involve complex issues and trade-offs that can only be adequately explored through ongoing education and discussions between service providers and consumers[11].

We also note that in a stakeholder review of IPART's performance in regulating the water sector, there were mixed views as to whether IPART's consultations are well promoted and inclusive. While the majority of these stakeholders were positive, describing consultations as 'transparent and impartial', 'well resourced', 'thorough' and 'effective', some were concerned that 'IPART can give a disproportionate weighting to the unrepresentative views of the few' and 'the subject matter is often quite dry and public hearings are very formal'.[12] It was suggested 'that instead IPART could think of using market research techniques to more effectively target appropriate people to attend the consultations'[13], in line with PIAC's preferred approach.

The current arrangements make it difficult to assess if water businesses are providing services customer value, and these services are being appropriately funded through regulated revenue allowances. An additional challenge is ensuring customers have the understanding and resources required to actively engage with IPART and water businesses on the complex issues that often arise in the context of regulatory reviews.

2.2.2 What other regulators are doing

Regulators and regulated businesses are increasingly recognising the importance of customer engagement. At its simplest this may involve publishing customer engagement guidelines. For example, the AER's Consumer Engagement Guideline for Network Service Providers sets out a principles-based consumer engagement approach for energy network service providers which specifies that consumer engagement should be:

- clear, accurate and timely
- accessible and inclusive
- transparent
- measurable.[14]

A consistent theme of changes in approaches to regulation in other jurisdictions is to put more onus on regulated businesses to demonstrate they have engaged with customers to understand what services and outcomes they value. This in turn may have implications for the regulatory framework. Regulated businesses have scope to deliver higher standards of service, with implications for costs and the associated prices, where customers have demonstrated they are willing and able to pay (see 4.3 for a summary of the ESC's approach).

---

[11] Public Interest Advocacy Center (PIAC), Submission - Review of Essential Energy's prices for water and sewerage services in Broken Hill (IPART), 5 November 2018.
[12] Findings from Independent Pricing and Regulatory Tribunal, 2017 Stakeholder Survey Final Report, 3 August 2017.
[13] Findings from Independent Pricing and Regulatory Tribunal, 2017 Stakeholder Survey Final Report, 3 August 2017.
[14] Australian Energy Regulator, Consumer Engagement Guideline for Network Service Providers, November 2013.

Other initiatives designed to improve customer engagement in regulatory price review processes have involved the establishment of customer engagement forums. For example, in South Australia ESCOSA has established a Negotiation Forum, which allows a group of key customer representatives to challenge SA Water during the establishment of the business plan (see section 4.2).

Box 2: ESC Approach to Customer Engagement

The ESC has shifted the core approach for price determinations towards one of greater customer engagement and input. Rather than prescribe a given methodology for this engagement, the ESC allows water businesses to utilise different approaches that they believe best suits each individual case. These processes must however follow five key principles for good customer engagement:

- Customer engagement should be tailored to suit the content on which it is seeking to engage.
- A water business must provide sufficient information and instructions to customers.
- Customer engagement should be given priority when it has significant influence on the services provided and corresponding prices.
- Customer engagement should start early in its planning, be ongoing and have sufficient testing throughout.
- The water business needs to demonstrate how it has considered the views of its customers in its price submission.

This process is then translated into the draft pricing proposals through a variety of mechanisms. The ESC has shifted from requiring extensive focus on inputs into a price submission. Rather, a business should describe what its customers will receive from the prices charged and how this translates to the customers' views expressed in the engagement process. These outcomes should be derived from engagement, tested on customers and measurable to demonstrate transparency and hold businesses accountable.

Some outcomes of this engagement in the most recent pricing determinations include:

- Barwon Water reduced fixed water tariffs and increased variable tariffs to give consumers greater control over water bills. This also included a transitional tariff adjustment for tenants as the consultation identified they would be the most disadvantaged by this change.
- City West Water simplified water bills by removing variable sewerage tariffs and reduced unit variable tariffs to one fixed amount for all customers.
- Yarra Valley Water expanded financial hardship programs and increased the options available for payment. They are also upgrading response times and information sharing for system leaks and disruptions to address system reliability concerns.

Box 3: ESCOSA Negotiation Forum

ESCOSA established the Negotiation Forum to ensure that the SA Water business plan for the upcoming pricing determination is thoroughly tested against the perspectives and priorities of the SA Water customer base. This was a suggestion made in the Uniting Communities submission to the draft Framework and Approach paper, and consistent with requests for greater transparency and consumer involvement by the South Australia Council of Social Service (SACOSS) and Business SA.

The Negotiation Forum is an approach to help address challenges in the past price determination framework, which included:

- Information asymmetries between SA Water, ESCOSA and other stakeholders.
- Lack of involvement of customers in the decision-making process.
- Limited time to address issues identified in the SA Water business plan once submitted.

ESCOSA hopes that the Negotiation Forum and the new Framework and Approach will address these issues by facilitating early and consistent stakeholder engagement and feedback. SA Water is required to establish and support the Negotiation Forum, consisting of:

- A Customer Negotiation Committee, comprising:
    - An Independent Chairperson (who will prepare the final public report)
    - A member of the Consumer Experts Panel, and
    - A member of SA Water's Customer Working Group.
- A three-member SA Water negotiation team.
- An independent Probity Advisor appointed by ESCOSA to oversee the integrity of the process.

SA Water are currently discussing draft business plan proposals with the Customer Negotiation Committee over a four-month period between February 2019 and May 2019. The negotiation process is non-binding for ESCOSA, and a successful process does not necessitate agreements on every aspect. Where both parties can reach an agreement which is consistent with the Commission's guidance, it is likely to be given significant weight in the draft determination. Disagreements have to be clearly addressed in the SA Water submitted business plan, with ESCOSA exercising judgement on those issues.

2.2.3 Key questions to explore in roadmap

In our view the key questions that merit discussion in the roadmap in relation to customer engagement are as follows:

- How should customer preferences and priorities be reflected in the price review process?
- How should customer preferences and expectations inform the setting of service levels, not just the five system performance standards?
- What is the most effective way of engaging with customers?
- Is there a role for funding customer representative organisations?

2.3 Linking performance standards and prices

How should performance standards and prices be linked?

The performance standards for water businesses determine the costs associated with meeting those standards, and the resulting prices to customers. Delivering value for money for customers therefore requires a close relationship between performance standards and prices, to ensure standards reflect customer priorities and the scope for beneficial trade-offs.

2.3.1 Current practice and scope for improvement

At present separate processes are used to identify performance standards and the associated prices. Performance standards for each regulated water business are set during the review of their operating license. IPART then considers the prudent and efficient cost of meeting these standards, and the resulting customer prices, at the separate price review.

The decoupling of standard setting and price determination makes it difficult to determine whether appropriate standards are being set for each service area, taking into account customer preferences and priorities. It is likely that the separation of standard setting and price determination under the current regime means opportunities to make beneficial trade-offs between standards and prices are being missed.

2.3.2 Emerging trends

In other jurisdictions standard setting is widely considered as an integral part of the price review process. There are linkages to customer engagement, discussed in the previous section, to inform standard setting can ensure service levels meet customer expectations while recognising the scope for trade-offs between standards and pricing. Alternatively, businesses could adopt increasing responsibility for setting standards through undertakings, rather than imposing mandatory requirements, like the Victorian approach (see section 4.3).

Box 4: ESC PREMO Framework

The ESC adopted a new approach to setting standards as part of the new PREMO arrangements. The ESC was concerned water businesses faced limited incentives to deliver on service commitments and innovate in service delivery. In particular, they noted water businesses that fail to meet standards do not face material consequences.

Under the PREMO arrangements water businesses will be explicitly assessed to determine if the performance outcomes the business committed to in its previous price submission been met or exceeded. The ESC will also assess the extent to which the proposed service outcomes for the next regulatory period represent an improvement, maintenance or decrease in performance standards. The ESC's assessment of these factors informs the rate of return the business is eligible to receive, reflecting on level of ambition in meeting customer standards.

Annual data collection is used to hold all businesses accountable to the outcomes made in the pricing determination. If a business fails to perform against this monitoring, penalties will provide lower customer bills and reduced revenue allowances for the water business.

2.3.3 Key questions to explore in roadmap

There are a range of approaches that could be used to strengthen the relationship between standard setting and price determination.

- Questions that merit further consideration in the roadmap process include:
- How should standards be included in the operating licence (for example, minimum standards)?
- How can we ensure performance standards reflect regional differences and customer expectations?
- How can the trade-off between standards and prices be reflected in the price review process?
- Should setting service standards be incorporated into the price review process rather than being set through a separate licence review process?
- What's the right set of incentives to drive innovation in service delivery?

2.4 Driving cost and service improvements

How can cost and service improvements be promoted?

A key challenge for IPART is ensuring prices reflect the prudent and efficient costs of providing these services. Identifying and incentivising achievable and ongoing improvements in costs and services is critical to ensuring customers receive value for money. How can cost and service improvements for regulated water businesses in NSW be promoted?

2.4.1 Current practice and scope for improvement

The current arrangements involve a range of mechanisms, which are costly but limited in scope. IPART routinely undertakes forensic, bottom up reviews of business costs. This is resource intensive and intrusive for regulated businesses. The conclusions drawn from these reviews often require significant judgement to be made by relevant experts.

To date benchmarking has been undertaken only on an ad hoc basis. We note that IPART has flagged its desire to make greater use of benchmarking in the future to help to drive further performance gains.

Hunter Water strongly supports the appropriate use of benchmarking as one of a suite of tools to inform price reviews. This requires that it is undertaken in a consultative fashion using best practice techniques based on robust and reliable data and is not applied in a mechanistic fashion to set revenue requirements.

There has also been partial use of incentive mechanisms for urban water businesses in NSW, resulting in sub-optimal sharing of risk and uncertainty and muted incentives for ongoing performance improvements. While IPART has applied an efficiency carryover mechanism to Hunter Water and Sydney Water, we have reservations about the effectiveness of the particular model adopted (namely that it is asymmetric and applies only to operating expenditure and not to capital expenditure).

In addition, the regulatory framework arguably involves a fundamental capex bias, in that there is no 'true up' for operating expenditure in the way there is for capital expenditure. Any such bias is not in the best interests of customers.

2.4.2 Emerging trends

There are a wide range of tools and mechanisms that are used by other regulators to motivate ongoing cost and service improvements in regulated business:

- **Totex allowances to address capex bias**: Ofwat and Ofgem determine a single totex allowance (rather than separate opex and capex allowances) and the regulated business determines the most efficient way to spend the allowance. The regulator may decide what proportion of the totex allowance is recovered within a single regulatory period, and what proportion is recovered over a longer horizon ('fast' vs 'slow' money) but may give considerable discretion to business in determining this.
- **Incentive mechanisms to share efficiency benefits**: A number of regulators have implemented efficiency sharing schemes designed to ensure regulated businesses have an incentive to make efficiencies regardless of the point in the regulatory period. These are generally less restrictive than the model implemented by IPART. For example, the AER applies benefit sharing schemes to both operating expenditure and capital expenditure and doesn't attempt to distinguish between 'temporary' and 'permanent' savings.
- **Sophisticated benchmarking as part of a tool box of options to drive efficiency:** Regulators tend to use benchmarking as one of many inputs into determining efficiency targets (rather than adopting a mechanistic approach) (see section 4).
- **Rewards and penalties for service performance:** Examples include Ofwat's Outcome Delivery Incentive Scheme which encourages businesses to develop quality targets and incentive schemes that would reflect their own customers' needs and objectives. Another example is the ESC Guaranteed Service Level (GSL) schemes which require the making of payments to customers who have received service that is worse than a predetermined guaranteed level.

Box 5: Approaches to benchmarking

Examples of how other regulators have applied benchmarking include:

- The Ontario Energy Board (OEB) in Canada uses the efficiency rankings derived from its econometric benchmarking models to group networks into five distinct cohorts. The cohort judged to be most efficient faces an efficiency adjustment, known as a 'stretch factor' of 0% per annum. The cohort identified as least efficient is assigned a stretch factor of 0.6 per cent per annum. The OEB views the stretch factors as mechanisms to encourage networks to become more efficient over time, and not punitive measures for inefficiency.
- Ofwat (the regulator of water companies in England and Wales) has in the past used its benchmarking to split the water and sewerage companies into five efficiency bands that each received the same moderated efficiency discount subject to a glide path.
- Ofgem, in its recently completed RIIO-ED1 investigation for electricity distribution in Great Britain used an upper quartile target in its benchmarking. Ofgem targeted the upper quartile, rather than the frontier firm, because it recognises that the modelling involves uncertainty so caution is warranted when applying the results. Additionally, Ofgem has made use of an interpolation procedure where final allowances are made up of 25 per cent of the companies' submitted costs and 75 per cent of its benchmarking models. Ofgem uses a 'toolkit' of approaches to determine its benchmarking target, including top-down econometric models, bottom-up unit cost analysis, bottom-up engineering assessments, assessments of historic costs and assessments of forecast costs, to provide the scope to cross check and sense check the efficiency estimates derived by any single approach.

2.4.3 Key questions to explore in roadmap

In our view the key questions that merit discussion in the roadmap in relation to driving cost and service improvements are as follows:

- What mechanisms can be used to incentivise water businesses to invest and spend efficiently while delivering service improvements?
- What techniques can be used to assess the prudency and efficiency of expenditure?
- How should benchmarking inform price reviews?
- Is there merit in exploring totex schemes?
- Is there scope to improve the existing efficiency carryover mechanisms?

2.5 Setting tariff structures

How can pricing influence outcomes?

Tariff structures and methodologies are central to sending efficient price signals to customers while recovering the costs of providing water and wastewater services.

2.5.1 Current practice

IPART's current approach involves directly setting price structures and maximum price levels for regulated services that apply for each year of the determination period.

In 2012, IPART reviewed the structure of prices for Hunter Water and the other metropolitan water businesses. This review established some general pricing principles to further improve the cost reflectivity of these prices, and to increase equity between customer groups. This is another example of the review of an aspect of regulatory framework outside the context of a price review. Hunter Water considers there is merit in revisiting the recommendations of this review to ensure they reflect best practice regulation.

In its 2016 price review for Hunter Water IPART discussed the potential merits of scarcity pricing (whereby the price of water would vary inversely with storage levels to send appropriate signals about when to use or conserve existing water sources). In particular, it considered a cost pass-through mechanism which would enable the additional costs associated with drought-response measures to be passed through to customers via an 'uplift' to the water usage price. While IPART provided for such a mechanism for Sydney Water for the costs associated with the operation of the Sydney Desalination Plant it did not provide for a similar mechanism for Hunter Water. This reflected the lack of certainty at the time about Hunter Water's future supply augmentation. However, it flagged the possibility of introducing a cost-pass through mechanism for Hunter Water's drought-response measures at the next pricing review.

IPART has also recently reviewed wholesale pricing and has proposed a retail minus form of regulation to most (but not all) of the wholesale services provided by public water utilities to new entrants.

Compared to other regulators, IPART's approach to price setting is highly prescriptive. IPART specifically rejected a proposal by Sydney Water for greater pricing flexibility through a weighted average price cap. However, in its review of Hunter Water (and Sydney Water) prices for 2016-2020, IPART did introduce a degree of pricing flexibility by allowing Hunter Water and large non-residential customers to enter into unregulated pricing agreements for water supply and sewerage services.

2.5.2 Emerging trends

A number of other regulators adopt a less prescriptive approach to setting tariff structures.

For example, the ESC has typically given businesses a large degree of discretion to determine tariff structures. It considers businesses are often best placed to consider the interests of their customers in designing tariffs and that existing tariff structures have been developed over time to deal with a variety of local circumstances[15]. The ESC encourages water businesses to consider specified tariff assessment principles and assesses proposed tariffs against the following factors:

- The business's consideration of risk and efficiency — particularly how proposed tariffs are consistent with providing signals about the efficient cost of delivering services.
- The business's approach to consultation on the tariff structures and how the views of customers were taken into account.
- Whether the business has considered and demonstrated that appropriate transition strategies will be implemented for any materially affected customers.
- The ability for customers to understand the resulting tariffs and tariff movements throughout the regulatory period.

2.5.3 Key questions to explore in roadmap

Questions that merit further consideration in the roadmap process include:

- What methodology/ies should be used to estimate the LRMC for water and wastewater?
- Is there merit in introducing scarcity pricing?
- Does detailed analysis of tariff structures consume a disproportionate amount of regulatory resources (by both by IPART and the regulated businesses) which would be better devoted to other issues?
- Should businesses have greater flexibility to set tariff structures, guided by their customers?
- IPART's role in setting exact and precise prices and charges for trade wastewater services and miscellaneous and ancillary charges. Should utilities have a greater level of price flexibility?

2.6 More cost-effective environmental regulation

How can the increasing costs of environmental regulation be addressed?

A material proportion of Hunter Water's capital program is driven by meeting mandatory standards, particularly environmental standards.

2.6.1 Current practice and scope for improvement

Under the current arrangements the NSW Environment Protection Authority (EPA) is responsible for monitoring and regulating Hunter Water's environmental performance. It issues Environment Protection Licences under the Protection of the Environment Operations Act 1997 (NSW) for Hunter Water's sewerage network, pumping stations and treatment systems. NSW Health is responsible for regulating the quality and safety of Hunter Water's drinking water.

Under the current economic regulatory framework, IPART is not responsible for setting the environmental or liveability objectives of the community, nor for determining the best way for such objectives to be met. Rather, its task is to ensure that the businesses' pricing proposals reflect only the prudent and efficient costs of delivering its services while complying with their regulatory

[15] Essential Services Commission 2016, 2018 Water Price Review, Guidance paper, November, p. 55

obligations. IPART has however stated that it would consider, and could allow, expenditure proposals to achieve standards higher than those mandated by Parliament and/or government if the business provides clear evidence that its customer are willing and able to pay to exceed the mandated standards. However, to date there has been little guidance on how this would be reflected in pricing determinations.

In Hunter Water's view there is considerable scope to achieve better value outcomes for customers and the environment through:

- Less opaque assessment of the economic costs and benefits of these standards
- Greater interaction between economic and environmental regulators and other stakeholders, and
- Improved links between environmental and economic regulation.

A recent review by Infrastructure NSW recommended a review into the scope for strengthening the role of cost-benefit analysis in setting environmental licence and discharge limits, along with considering the role of trading schemes in delivering environmental benefits. Hunter Water suggests that such a review could be undertaken by IPART.

2.6.2 Emerging trends

In Tasmania a recent initiative is the adoption of a 20-year Long Term Strategic Plan (LTSP). This initiative was developed by TasWater in 2016 as a basis for reaching consensus with key stakeholders (including the health and environmental regulators and State government). The plan aims to set an outline for the investment necessary to meet the regulatory and compliance standards, as well as the trade-offs required to achieve such standards.

Overall, the LTSP provides direction for TasWater over the next 20 years, as well as acting as a focus point, reflective of the organisation's targets, customer preferences and customer support. The LTSP links strategic objectives with proposed works and improvements and has been designed to guide ongoing capital planning and the development of all future Price and Service Plans (PSPs).

2.6.3 Key questions to explore in roadmap

In our view the key questions that merit discussion in the roadmap in relation to environmental regulation are as follows:

- Is environmental regulation proportionate, flexible and efficient?
- How can regulators work together to deliver value for money for existing and future customers?
- How should externalities be valued?

3. The way forward

The previous sections discussed the need for a regulatory roadmap and the issues that could be addressed. This section proposes a way forward for developing a regulatory roadmap.

3.1 Identifying and prioritising issues

We suggest, as a starting point, IPART initiates a review that provides an opportunity to engage with all stakeholders. This review would identify and prioritise the issues for the roadmap, through a clear and transparent process. IPART could seek feedback on the following questions:

- What are the key issues in the NSW water industry?
- What are the future challenges for the NSW water industry?
- What is the objective of water sector regulation in this context?
- What are the regulatory issues that need to be addressed to ensure water sector regulation meets its objectives and the key issues and future challenges for the NSW water sector are addressed?
- How can these issues be prioritised? For example, by considering the relevance of the issue and the potential benefits from addressing the issue.

This feedback could be sought via an issues paper style report, or a more streamlined alternative could involve a workshop with key stakeholders.

Involving stakeholders at the outset is essential to inform the identification and prioritisation of issues, enabling the development of a manageable workstream of issues within IPART's mandate. It may be that many of the issues raised are outside IPART's control and may need to be taken forward by Government.

The output from this review process would be a clear and prioritised initial list of issues to be addressed in the roadmap. These issues and priorities could be revisited as part of a regular cycle as new priorities and issues emerge.

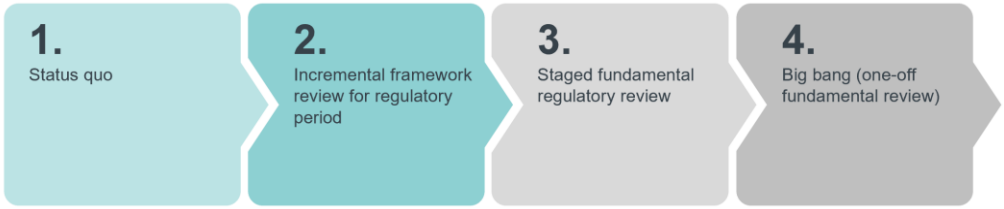
3.2 Approach to implementing roadmap

There are a range of potential approaches that could be adopted in implementing the roadmap. Four approaches are illustrated in Figure 3.1 below:

- **Option 1:** As discussed in Section 1, the status quo provides limited opportunity for considering regulatory framework issues in a systematic and integrated way.
- **Option 2:** An alternative would be to include a systematic review of regulatory methodology as an integral part of each regulatory reset, similar to the 3:2 approach adopted by Ofwat (discussed in more detail in Appendix A). This would involve reviewing the methodology to be applied as the first step in each regulatory reset, drawing on the lessons from the previous regulatory period and recognising the future challenges.
- **Option 3:** Another option would be to adopt a broader, more fundamental review of regulatory approach, staged over a period of time to minimise the administrative burden. This is similar to the approach adopted by Ofwat in its Water2020 review. The Water2020 review took place over a three year period, in place of Ofwat's regular 3:2 review, but involved a more fundamental review of regulatory approach rather than adjustments to the regulatory methodology, and resulted in a shift in regulatory approach with more responsibility placed on the regulated businesses and a more light-handed role for the regulator.

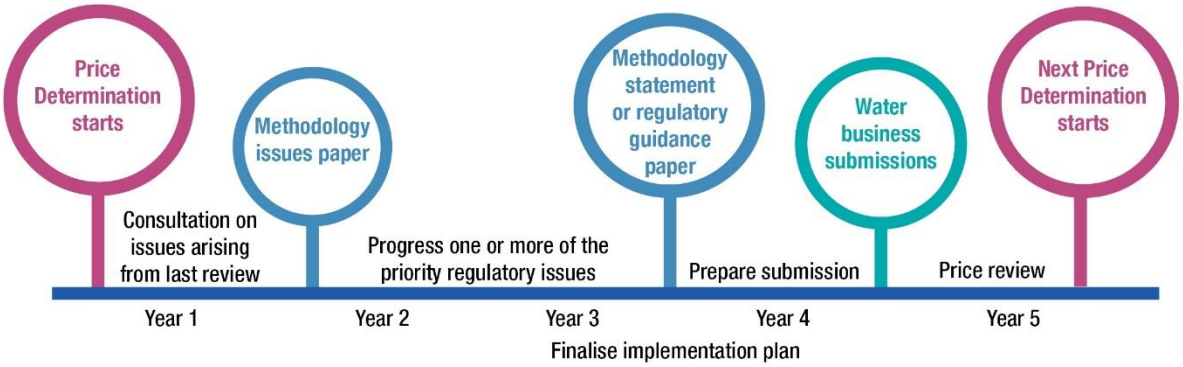
- **Option 4:** Finally, an alternative would be to undertake a relatively fast-paced fundamental review of regulatory approach. This was the approach adopted by the ESC in the lead up to the introduction of its PREMO regulatory framework (see Appendix A). ESC's PREMO review was initiated and completed in 18 months and resulted in a fundamental shift in regulatory approach.

Figure 3.1 Options for implementing the roadmap



Given one of the key motivators for the development of a roadmap is to manage the administrative burden associated with regulatory and other ad hoc reviews, we suggest an incremental approach to the development of the roadmap (Option 2). The process would start with a systematic review of regulatory methodology as an integral part of each regulatory reset, similar to the 3:2 approach adopted by Ofwat UK. This would involve reviewing the methodology to be applied as the first step in each regulatory reset, drawing on the lessons from the previous regulatory period, other economic regulators, and recognising the future challenges.

Figure 3.2 Recommended approach to implementing the roadmap



3.3 Reviews of policy framework

As we discussed in Section 3.1, some of the issues raised when identifying and prioritising matters for the roadmap will be beyond the jurisdiction of IPART. Nevertheless, IPART has a critical role to play as a well-informed and well-resourced stakeholder in the broader policy debate surrounding the NSW water industry.

More broadly, Hunter Water considers there is merit in identifying and addressing the elements of the current legislative framework within which IPART operates which may impede the adoption of best practice approaches to achieving the objectives of economic regulation.

4. Reviews of regulatory frameworks in other jurisdictions

4.1 Ofwat framework review process in UK

4.1.1 Overview

The Water Services Regulation Authority (Ofwat) is the independent regulator of Water in England and Wales and has the legislative power to enforce price limits on water businesses. England and Wales privatised the water industry in 1989 and now has 18 large companies that are independently run and are monopoly suppliers for their respective regions.

Since 1994, Ofwat has conducted five price reviews on the industry, all setting price limits for fixed five-year periods. The legislative requirements of Ofwat are to set price controls in a manner considered best calculated to meet several objectives, including customer outcomes, sustainable financing, long term resilience, economic efficiency and sustainable development.

These requirements give Ofwat the discretion to determine the best frameworks that enable these outcomes within the five-year periods, and so they have reviewed each price reform to ensure they can build on the next ones.

4.1.2 Drivers for review of regulatory framework

Given that Ofwat have always reviewed their framework as part of their price determination process, recent reviews of their regulatory frameworks reflect a history and culture of encouraging feedback and continual improvements. The flexible legislation on how Ofwat operates in the regulatory environment also allows greater creativity on how frameworks can best deliver outcomes for customers.

The most recent price determinations in 2014 (PR14) and upcoming for 2019 (PR19) have seen more substantial changes in how customers are engaged through the process. The motivation may simply stem from a culture of reviews, with previous price determinations incentivising even more innovative ways to improve regulation and may have made stakeholders more receptive to change.

Ofwat is also a member of UKRN, a United Kingdom regulator network that facilitates sharing of ideas and learnings. The recent framework reviews are coincident to the introduction of reviews and incentive-based pricing reforms by Ofgem, indicative that regulators had recognised the frameworks may have been outdated.

4.1.3 What review process was used?

As described previously with the continual review process for their frameworks, Ofwat have favoured using a structured consultation process in recent reviews. The most recent framework reform has been for the 2019 pricing review, currently in its final stages. The process is briefly described below.

Figure 4.1 Framework review timeline: Ofwat

Source: Frontier Economics.

4.1.4 Key issues raised

Consultation in December 2015 invited parties to submit proposals on the regulatory approach and their learnings from PR14. These parties included water businesses, customer and environmental groups, and other government stakeholders in the water industry. PR14 had significant changes to the regulatory framework, including much greater customer engagement based on performance outcomes and a shift towards using total costs (Totex). This consultation largely stemmed from these changes, where it sought to engage stakeholders on whether anything needed to be adjusted in the next framework.

These questions were extensive but structured, and gave stakeholders the opportunity to raise other issues not identified by Ofwat. Using this methodology, Ofwat could consolidate opinions from a broad spectrum of stakeholders and address all issues thoroughly without further consultation periods after the final methodology release. Issues identified include:

- Concerns on pricing methodologies, including asymmetric incentive mechanisms,
- Issues with the balance of risk and return, such as costs of capital and inflation, stemming from changes in PR14, and
- Affordability remained a core issue in consultations.

4.1.5 Outcomes of review

Following consultation, Ofwat released the Water 2020 framework report to outline the methodology they proposed to use for PR19 and what issues they were aiming to address. The framework establishes several changes, including:

- Strengthened expectations on customer engagement, including a greater role of the customer challenge groups established previously by Ofwat.
- Use of a more credible inflation index.
- A new access pricing framework to facilitate possible new entrants to the water industry.
- Pricing incentive pilots C-MeX and D-MeX, which will give greater revenue limits for businesses that have higher customer satisfaction scores.

The final methodology was released in December 2017, giving nine months for water businesses to prepare their business cases with the new framework. The continual reform process allows any issues that arise with the pricing determination to be addressed in the next framework. Knowing this, Ofwat can be more experimental and innovative with the pricing determinations.

4.1.6 Implementation of framework

The most recent review process is still being implemented for prices starting in 2020. Water businesses in the UK submitted their business plans in September 2018, nine months after the final framework methodology was released. Only three of the businesses could have fast-tracked reviews, with the other fourteen major suppliers requiring further work, or in some cases substantial rework and increased regulatory scrutiny.

4.2 Essential Services Commission of South Australia framework review process

4.2.1 Overview

The Essential Services Commission of South Australia (ESCOSA) is the independent regulator for essential services in South Australia. The Water Industry Act 2012 established that the water industry must have economic, technical, water planning and customer complaint regulation. For South Australia, this includes regulating SA Water, which supplies 99 per cent of water in South Australia, along with smaller regional suppliers of water and wastewater services. ESCOSA regulates SA Water separately to the smaller providers. This case study focusses on the economic regulation framework for SA Water.

The ESC Act 2001 and the Water Industry Act 2012 give significant discretion to ESCOSA to determine the methodology of price regulation for the industry. Subsection 1 of Section 35, Division 3, Part 4 of the Water Industry Act states: [16]

> *Subject to this section, the Commission may make a determination under the Essential Services Commission Act 2002 regulating prices, conditions relating to prices, and price-fixing factors for retail services.*

This subsection gives ESCOSA the freedom to review frameworks for price determinations to ensure the legislative, regulatory and internal requirements are being delivered. ESCOSA has published three price determinations since 2012.

4.2.2 Drivers for review of regulatory framework

ESCOSA reviewed the processes for the SA Water Regulatory Determination 2020 (SAW RD20), to determine retail prices from 1 July 2020. This may be part of continual review processes into the future, as their previous price reforms also had smaller framework reforms within the pricing determination.

This review stems from the desire to improve the regulatory framework that was still in its infancy in South Australia. It is further aided by the legislation described previously, that gives ESCOSA this freedom to change the regulatory framework.

Part of the pricing determination framework in the previous pricing period allocated time to evaluate and test pricing determinations. This was to ensure customer objectives are met, economic efficiency is being realised and SA Water is financially sustainable. ESCOSA also acknowledges that interstate and international regulators are becoming more innovative in how they use incentives and customer engagements in their pricing determinations[17], which signals that they too wanted to seek best practice in the upcoming price determinations.

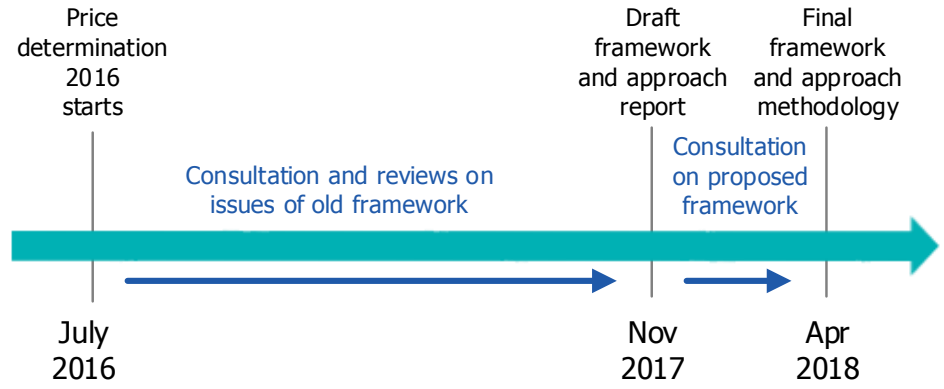
4.2.3 What review process was used?

The timeline of the most recent framework review by ESCOSA is described below. The most extensive period of the review process is the consultation period of the current pricing determination, which is complementary to the regulatory processes to ensure SA Water are complying to standards.

---

[16] Water Industry Act 2012, p. 25
[17] SAWRD20 Framework and Approach, July 2018

Figure 4.2 Framework review timeline: ESCOSA



Source: Frontier Economics.

4.2.4 Key issues raised

SA Water identified in their initial framework report that future frameworks required:

- Longer term perspectives for SA Water. A four-year regulatory period is still proposed (but was to be considered in the review), but mechanisms were considered to encourage longer term strategies on customer and revenue outcomes.
- Continual encouragement to deliver the lowest sustainable price for water services for the quality demanded by customers.
- Evidence that SA Water understands the customer values and develops proposals based on these requirements.

The report was followed by extensive consultation with stakeholders, which encouraged participation and consultation across entire structure of the framework, incentive structures and price determination process. The consultation period highlighted that:

- Large information asymmetries exist between SA Water, ESCOSA and other stakeholders
- There is a lack of involvement of customers in the decision-making process, and
- Limited time is available to resolve issues identified in the SA Water regulatory business proposal once submitted.

4.2.5 Outcomes of review

The resulting framework outcomes include:

- Guidance papers at the start of the determination period, which set out background information on the methodology, parameters and expectations of SAW RD20. This is to address submission concerns by stakeholders on upfront clarity and early identification of issues.
- A Negotiation Forum, which allows a group of key customer representatives to challenge SA Water during the establishment of the business plan. This is a non-binding process chaired by ESCOSA, where agreements will be likely to be accepted by ESCOSA in the business case for SA Water, with disagreements also made clear by SA Water and clarification on their views.
- A Regulators Working Group sets out coordination with other regulators such as SA Health and the EPA to minimise duplication of effort, oversight and find opportunities for efficiency and joint roles.

4.2.6 Implementation of the review

SA Water submitted their draft business case for SAWRD20 in October 2018, six months after the final methodology of the regulatory framework was released by ESCOSA. The Negotiation Forum is currently underway and will lead to the development of the final business case by SA Water in October 2019.

4.3 Essential Services Commission (Victoria) framework review process

4.3.1 Overview

The Essential Services Commission (ESC) is the independent price regulator for essential services in Victoria. For the water industry, this includes regulating prices for the three metropolitan retail water suppliers in Melbourne, the bulk water supplier for these retailers (Melbourne Water), and the 13 vertically integrated water utilities in regional Victoria.

The ESC is given significant power and discretion in setting water tariffs to ensure that the businesses are financially viable, providing services efficiently and promote the long-term interests of Victorian consumers. These are set out by the Water Industry Regulatory Order (the WIRO), under the Water Industry Act 1994, with the ESC pricing determinations established in 2004. The ESC under the WIRO was mandated to review prices from the water utilities under a building blocks framework revenue. This then had to satisfy several regulatory principles that often conflicted with no basis for how to prioritise them.

4.3.2 Drivers for review of regulatory framework

In 2014, the Victorian government reviewed the WIRO and removed the prescriptive approach to water pricing. This review took place under the Water Act 2014 to create a logical and streamlined Act to replace the incrementally amended Water Act 1989 and Water Industry Act 1994.

This gave the ESC discretion to decide on the methodology used to deliver efficient pricing and services for customers. As described by the ESC chairperson Dr Ron Ben-David in the final methodology report in 2016:[18]

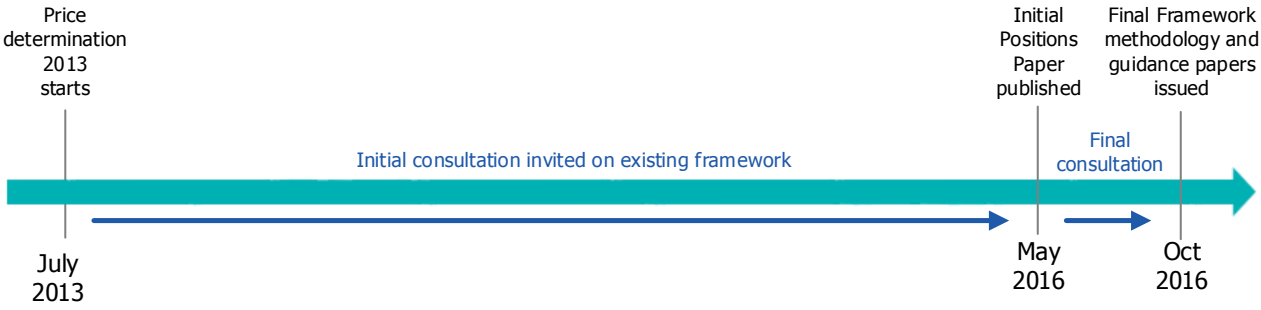
> *The evidence shows that independent economic regulation has brought a much clearer focus on performance and prices to the Victorian water industry; but we felt more could be done to promote greater efficiency and to ensure the delivery of outcomes that customers value.*

4.3.3 What review process was used?

The ESC framework review was comparatively rapid and radical to other reviews considered here. This may be due to the ESC being constrained in their approaches previously. We understand the ESC will continue to conduct regular ex-post reviews of price reviews into the future. The timeline is shown below:

[18] ESC, October 2016, Water Pricing Framework and Approach: Implementing PREMO in 2018

Figure 4.3 Framework review timeline: ESA



Source: Frontier Economics.

4.3.4 Key issues raised

The ESC released an initial consultation paper in April 2015 to facilitate consultation on various factors of the framework. Unlike Ofwat in the UK, this consultation was less guided and up to the discretion of stakeholders. It also included a number of commissioned 'thought pieces' from regulatory experts, to help guide the reform process. The themes that arose included:

- Opportunities to improve how water businesses engage with customers
- Simpler regulation processes
- Incentives for businesses to deliver outcomes that reflect customer preferences, and
- The building blocks approach is supported by the water industry as it gives transparency, consistency and is understood by customers.

4.3.5 Outcomes of review

In May 2016, the ESC released its positions paper for final consultation, which included:

- Price submissions by water utilities must demonstrate comprehensive engagement with customers on its proposed outcomes.
- Alignment of expenditure and the outcomes to be delivered, with these priorities tested on consumers.
- PREMO – performance, risk, engagement, management, outcomes – a varying rate of return on equity given a self-assessment of ambition.

4.3.6 Implementation of review

The first pricing review to use this framework was introduced in July 2018. Price submissions were first lodged in September 2017, a year after the Guidance Papers were published. Across the 17 water corporations, 150,000 customers were consulted in that period.

4.4 Australian Energy Regulator Framework and Approach reviews

4.4.1 Overview

The Australian Energy Regulator (AER) is the independent economic and service regulator for wholesale and retail energy markets in Australia (except Western Australia). Economic regulation is placed on the wholesale electricity networks by setting the maximum revenue they can earn in a regulatory period.

Electricity regulation of these networks is governed by the National Electricity Rules (NER). Unlike the previous examples that had legislative freedom to determine the most appropriate regulatory mechanisms, the NER details the process the AER must follow for price determinations. This includes applying a building block methodology using specific rules to calculate revenue allowances and meeting specific deadlines in the review process.

4.4.2 Drivers for review of regulatory framework

In April 2014, AER released the Better Regulation Program review. This followed changes in the National Electricity and Gas rules in November 2012. These rules changes included an extension of the regulatory determination process to better enable stakeholder engagement, new capital expenditure incentive schemes approved for consideration and a common framework on rates of return for distribution, transmission and gas[19]. AER adopted similar guiding principles in the Better Regulation review, including improvements to efficiency, incentive mechanisms and stronger consumer engagement. Reforms that resulted from this review included:

- New incentive schemes, including the Capital Expenditure Sharing Scheme for CAPEX, Efficiency Benefit Sharing Scheme for OPEX and the Service Target Performance Incentive Scheme for service quality.
- High level consumer engagement guidelines and the Consumer Challenge Panel to provide greater consumer input in the business proposals.

Following this and as part of the NER, the AER is also required to publish a Framework and Approach Paper before any pricing determination. This is the first step in a two-year process to review what services to regulate, incentive regimes to use and the form of pricing control. It is expected by all parties that the AER will review past regulatory frameworks and will be publish findings with significant time before any pricing determination.

Reforms within the Framework and Approach review are at the discretion of AER if the governing legislation is met. Part of their motivation for reforms in the most recent Victorian regulatory period was the changes to the NER on service classification. This allowed for changes in what businesses the AER should regulate and in what manner.

Given the breadth of regulatory determinations under the AER, innovations that may be designed for specific price determinations may also motivate continual reform in the AER. This is the case with the Demand Management Incentive Scheme; originally designed for regions in the electricity market with volatile peak demand and then introduced in other regulated regions when it was proven successful.[20]

4.4.3 What review process was used?

This section outlines the review process for Frameworks and Approach paper, which is guided by the NER. This process is specified below:

---

[19] Australian Energy Market Commission, November 2012, Information Sheet: Final Rule Determination – Economic Regulation of Network Service Providers

[20] Australian Energy Regulator, December 2017, Explanatory Report: Demand management incentive scheme

Figure 4.4 Framework review timeline: AER

Source: Frontier Economics.

The AER adopted a shorter review process than the other case study regulators, with less stakeholder engagement. There is however greater focus on engagement and consultation during the individual distributor business plans.

4.4.4 Key issues raised

During the consultation period for the recent Frameworks and Approach review, several concerns arose from various stakeholders. These included:

- Tweaks were needed in the new service classification guide
- Need for even more focus on customer outcomes, and not just acknowledgment that consultations have been made
- Greater provisions through the price control formula for outcome contingent projects, and
- Customer costs deriving from incentive structures were distorted.

Some of these issues were addressed in the final Framework and Approach. However, in the case of the customer outcomes, the AER state that the purpose of the Framework and Approach was not to address the methodologies in which service providers should consult with customers[21]. This highlights that the legislation requirements of the frameworks may prevent adequate responses to concerns raised by stakeholders, as change to more general processes needs to occur in the NER.

4.4.5 Outcomes of review

The outcomes of the most recent Framework and Approach review include:

- Service classification changes, that allowed AER to move away from the status quo and be less constrained by historical classification of service providers
- Maintain historic price controls, and
- The new Demand Management Incentive Scheme and the accompanying Demand Management Innovation Allowance Mechanism, to encourage efficiency upgrades and R&D to demand management infrastructure.

Although most of this framework is final and distributors are required to follow the methods outlined, there is still some freedom to refine some factors within the framework. This includes tweaking incentive mechanisms, and to a lesser extent the service classifications. This means the regulatory framework may still further reform over the pricing determinations.

[21] Australian Energy Regulator, January 2019, Final framework and approach: AusNet Services, CitiPower, Jemema, Powercor and United Energy.

4.4.6 Implementation of review

The AER published the Framework and Approach in January 2019, which allowed Victorian distributors to submit regulatory proposals in July 2019. This process will lead to further consultation and drafting of regulatory decisions to be finalised by October 2020. It is again important to note that some methods in the framework are not final and could be further refined in the consultation process, including the incentive mechanisms.

4.5 NZ Commerce Commission review of input methodologies

4.5.1 Overview

The Commerce Commission of New Zealand (NZCC) is the competition, consumer and regulatory agency. They are responsible for regulating the electricity distribution, gas pipelines, telecommunications and airport sectors. Under Part 4 of the Commerce Act, the NZCC must outline the rules, requirements and processes in which services will be regulated, known as Input Methodologies (IM). These methodologies are designed to provide certainty to suppliers over the regulatory period, to stimulate long term incentives and to deliver long-term benefits for consumers. The NZCC have the legislative freedom to undertake regulation that best delivers the outcomes listed above.

4.5.2 Drivers for review of regulatory framework

The NZCC under the Commerce Act are required to review IMs before seven years have passed from publishing the last industry IM. The first IM was determined in 2010, and so triggered a review to be completed in December 2016, a year before the required date. This ensured that the review would reach final determination in time for the regulatory period reset for gas suppliers in July 2017.

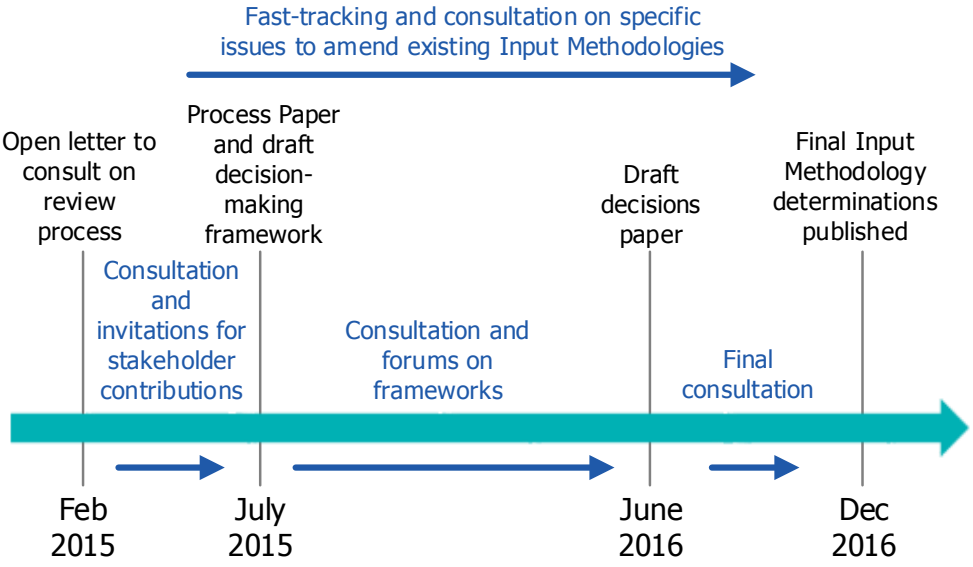
The NZCC is responsible for the review process. As a result, the NZCC decided to review all input methodologies for each industry sector simultaneously, to maintain a cross-sector approach to regulation. This was also to realign the input methodologies as some sectors, such as Transpower, had amendments to their frameworks after the price determinations.

4.5.3 What review process was used?

The process in which the NZCC conducted the framework reviews for all industries is given below in the diagram. What is unusual about the process is that they sought consultation about the review process itself in February 2015, including timings and alignments with other reviews.

The process was undertaken in two simultaneous streams. One stream narrowed down on key guided topics of each IM, which largely focussed on details in the pricing methodology. The second stream was designed to understand the effectiveness of the IM process overall and to identify issues not yet raised in the IM review. These streams then both flowed into the final IM determinations.

Figure 4.5 IM review timeline: NZCC



Source: Frontier Economics.

4.5.4 Key issues raised

For brevity, the following sections will focus on the issues, outcomes and implementation on electricity distribution regulation. Key issues identified by the NZCC and consultation included:

- Cost recovery and disincentives that arose from the previous IM framework, including high costs to apply for custom price quality paths
- Weighted average price caps may prevent electricity distribution providers from shifting to more efficient pricing and conflict with Electricity Authority's responsibility with pricing, and
- Uncertainty on new technologies and impact on capital investment.

4.5.5 Outcomes of review

Changes in the IM for electricity distributors include:

- Reducing costs through separate WACCs under custom price-quality paths and reducing complexity of application process
- Utilising a 'pure' revenue cap rather than weighted average price caps to give greater flexibility to efficient pricing for both the Electricity Authority and distributors, and
- Reducing existing asset lives to allow for uncertainty over future technologies.

Some amendments to the existing IM were fast-tracked by November 2015, such as more flexible application processes for custom price-quality paths[22].

4.5.6 Implementation of review

Implementation of the new IM frameworks have been staggered depending on the price resets for each industry. For example, electricity distributors had their pricing reset at the end of January 2019. Despite this, the fast-tracking of many of the key issues meant that some changes to the framework were already implemented in framework amendments, such as amendments to custom price quality paths for electricity distributors.

[22] NZCC, November 2015, Input Methodologies review – Amendments to input methodologies for customised price-quality paths

5. IPART related work over the period 2015-16 to 2019-20

This section lists out all of the reviews and inquiries between Hunter Water and IPART over the current regulatory period that relate to IPART's economic regulatory model.

In a four-year regulatory price review, one year is taken up by IPART's price review. Hunter Water needs at least nine months prior to the review to prepare the price submission – a major call on the business given the multiple inputs from across the organisation. That leaves two years to complete all of the catch-up reviews, like wholesale pricing, recycling water pricing, WACC review, financeability test and developer charges.

Hunter Water and IPART worked on more than 12 reviews during the period 2017-18 and 2018-19. This was a big call on our limited resources in the regulatory area.

This list of reviews is attempting to show why a four-year period is too short. There is no 'clear air' to a do a step-back review. We are either doing price submissions and price reviews, or getting buried in the detail of other aspects of the building blocks, tariff structures, or other regulated prices.

Hunter Water considers that an extra year, a five-year price path, would completely change the process. It would give IPART extra time up front in the review cycle to take some time to think and delve into more substantive changes to the regulatory model. IPART could still initiate and complete other narrower reviews, but there would be no need to squeeze them into a tight two-year window in the review cycle.

IPART's review of Hunter Water's operating licence generally occurs every five years – next scheduled for 2021-22. The operating licence is crucial – it gives Hunter Water the right and responsibility to carryout all current functions. A five-year regulatory period would mean a staged review process for pricing and licensing, avoiding a double-up in some years. It would also ensure that Hunter Water can commit resources to the review of operating licence bearing in mind the importance of getting the licensing requirements right..

5.1 Work completed in 2015-16

- IPART 2015-16 Price Review
    - Hunter Water lodged price submission on 30 June 2015
    - IPART Issues Paper, Public Hearing, Draft Report and Draft Determination, Final Report and Final Determination
    - IPART expenditure review (September to December 2015) – presentations, information request, on-site interviews, review of draft reports, follow up information requests
    - IPART initiated the review of wholesale pricing to wholesale customers as part of the retail price review
    - Implementation of changes to price structures (prior to 1 July 2016)

5.2 Work completed in 2016-17

- IPART review of Hunter Water's Operating Licence, 2017 to 2022, including Customer Contract and Reporting Manual
    - IPART Issues Paper (May 2016), Draft Operating Licensing Package (December 2016), Public Hearing (February 2017), Final Report and Licence (May 2017)
    - IPART cost benefit analysis
- IPART review of wholesale pricing: Discussion Paper (April 2016), Draft Report and Determination (November 2016), Public Hearing (November 2016), Supplementary Draft Report (March 2017), Final Report (June 2017)

5.3 Work completed in 2017-18

- IPART review of the Asset Disposal Policy, Issues Paper (September 2017), Final Report (January 2018)
- IPART review of the Weighted Average Cost of Capital Method, Fact sheet (November 2016), Issues Paper (July 2017), Public Hearing (August 2017), Draft Report (October 2017), Final Report (February 2018)
- IPART review of the Cost Allocation Guide under the Water Industry Competition Act
- IPART review of Compliance and Enforcement Policy, Draft Report (October 2017), Final Report (December 2017)
- IPART review of Water Utility Performance Indicators, Issues Paper (Feb 2018), Roundtable (March 2018), Draft Report (April 2018), Final Report and reporting manual (June 2018)
- Hunter Water proposal to IPART on the regulatory treatment of Biodiversity (Offset) Credits (various meetings, presentations, information papers, HWC proposal and final IPART advice) throughout 2017-18

5.4 Work completed or underway in 2018-19

- IPART review of the Financeability Test, Issues Paper (May 2018), Roundtable (May 2018), Draft Report (August 2018), Final Report (November 2018)
- IPART review of Developer Charges and Backlog Sewerage Service Charges: Issues Paper (October 2017), Public Hearing (March 2018), Draft Report (June 2018), Final Report (October 2018)
- IPART review of the Annual Information Return and Special Information Return spreadsheet, Information Paper (May 2018), HWC comments (July 2018) and draft templates (July 2018)
- IPART review of Central Coast Council's prices from 1 July 2019: Hunter Water submission to Issues Paper focusing on the interchange transfer price (September 2018), public hearing (November 2018)
- Review of the Working Capital Allowance, Information Paper (July 2018), Policy Paper (November 2018)
- Hunter Water submitted a proposed Economic Level of Water Conservation Methodology to IPART, HWC Discussion Paper (September 2018), Final report and method (January 2019)
- IPART review of Sydney Water's Operating Licence, Issues Paper, Draft Licensing Package, Public Hearing
- IPART review of recycled water pricing for public water utilities, Issues Paper (September 2018), Public Hearing (December 2018), Draft Report (April 2019), Final Report (June 2019)
- IPART's component costing and benchmarking review. IPART engaged AECOM to prepare an Approach Paper: Calculating and benchmarking component costs for Sydney Water and Hunter, October 2018. This project involved numerous meetings between IPART, AECOM, HWC and SWC to discuss the scope of the project, data availability, benchmarking techniques and reporting requirements. IPART decided to place this project on hold until after the 2019-20 price reviews – given concerns about data quality, timing with other work, the application of the results of partial performance measures.
- BOM review of the National Performance Report, Issues Paper (December 2018)
- Preparation of Hunter Water's 2019 Price Submission (internal workshops, various management and Board papers, capital prioritisation and opex budgets (November 2018), revenue requirement (January 2019), tariff levels (February 2019), drafting and review, quality assurance (January to July 2019)