

Sydney Water's response to IPART's Draft Determination

Review of prices for Sydney Desalination Plant Pty Ltd from 1 July 2017

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Executive summary

Sydney Water welcomes the opportunity to respond to the Independent Pricing and Regulatory Tribunal's (IPART's) Draft Report and Determination on the maximum prices the Sydney Desalination Plant (SDP) can charge over the five year period from 1 July 2017 to 30 June 2022.

Sydney Water's position on the Draft Report and Determination

One of IPART's key objectives for this price determination was to remove potential barriers to the efficient use of SDP. Throughout this process, Sydney Water has sought to ensure our customers did not bear additional risks or costs for any pricing reforms if they did not derive a benefit.

In making its draft decisions, IPART has recognised that SDP's original and primary purpose is to provide an insurance measure in case of future drought. The core value of SDP is being available to supply non-rainfall dependent water that can supplement water supply from the dams. While there may be economic arguments for increasing SDP's operational flexibility, any changes needed to be consistent with the complex and intricate suite of governance arrangement that were originally created around the plant's operations.

Sydney Water supports the majority of the draft decisions made by IPART. However, we do have concerns in some specific areas, including the lack of an effective abatement mechanism for non-drought conditions and aspects of the revised cost sharing rules.

In relation to abatement, we fully support IPART's objective of incentivising SDP to ensure the plant performs well when switched on, and would recommend extending the regime to when the plant is switched off, as its 'availability mode' is an equally core reason the plant was built, and one of its two recognised services. We consider this issue further in Chapter 4 and Confidential Appendix 1.

In relation to cost sharing, the draft determination proposed that the incremental service charge during plant operations would be shared on an impactor pays basis – which is different to the position outlined by IPART in the Issues Paper. We believe that this may lead to a perverse outcome during drought, and send inefficient price signals to water users. As the relevant costs are only needed when the plant is producing water, we believe that costs should be shared on a beneficiary pays basis. Further comments on the cost sharing rules are provided in Chapter 7.

Sydney Water's response to specific draft decisions

Incentivising SDP to maximise supply and availability

- Sydney Water supports broadening the abatement mechanism so that it applies uniformly through drought, a time when SDP is required to maximise the production of drinking water.
- Including an eight month grace period in the abatement mechanism, following a restart trigger, increases opportunities for efficient use of the plant as it will allow SDP to supply drinking water at less than maximum volume while production ramps up after a shutdown period. Sydney Water supports this change.

 However, Sydney Water believes it would be in the public interest to extend the abatement regime to cover all scenarios outside drought. Abatements serve to encourage strong performance. The plant has two formally recognised services: being available to provide supply, and actual supply. If IPART supports the objective of incentivising the plant to perform strongly for the community it serves, there appears to be strong rationale for implementing an abatement regime for its availability mode, as well as for its active supply modes. This will encourage SDP to ensure the plant is kept in an optimal state of readiness at all times.

Cost sharing

- Sydney Water generally supports IPART's changes to the cost sharing arrangements for SDP's regulated charges.
- However, IPART's analysis of the cost sharing rules does not consider treatment costs for water supplied by Sydney Water. When water sources are compared on a like-for-like basis, Sydney Water has identified a scenario where desalinated water may be cheaper than dam water which could lead to perverse and economically inefficient outcomes (e.g., an opportunistic water user switching to SDP during drought).

Membrane replacement

- Sydney Water supports creating a separate membrane regulatory asset base (RAB).
- The starting membrane RAB has been estimated based on replacing all membranes on first restart. However, it is possible some membranes may be replaced as part of storm-related reinstatement works. Sydney Water seeks assurance that any membranes replaced as part of reinstatement works will be excluded from the starting membrane RAB.
- After full membrane replacement on restart, the draft determination does not anticipate any further replacements in the 2017-2022 price period. However, if the plant restarted and then continued to operate in the following (2022-2027) price period, it is likely to be prudent and efficient to replace a portion of the membranes for energy efficiency reasons. Sydney Water would like to understand how any such replacements would change the membrane RAB.

December 2015 storm event

- It is a good outcome for our customers that IPART's insurance consultants have confirmed SDP's view there is no insurance gap and no costs will be passed-through to our customers.
- We agree that the reinstatement works should not give rise to changes in asset lives or RAB values.
- Currently, network energy capacity costs are passed through via the Fixed Network Charge. We expect the capacity cost will increase because of work associated with storm repair, for a period of 12 months, and we don't think our customers should pay this cost. An appropriate solution could be to use a benchmark volume equivalent to last year's capacity cost or an average of costs since the plant was last run.

The new Operating Rules

- The revised operating rules in the 2017 Metropolitan Water Plan changed the drought triggers for SDP and introduced a new minimum run-time following a restart trigger. Sydney Water considers the updated rules clarify the drought response service provided by SDP, and should not require any changes to IPART's draft decisions.
- However, Sydney Water notes that the Network Operator's Licence for SDP will need to be updated to give effect to the revised operating rules. Changes to the abatement mechanism proposed in the draft determination may also require consequential amendments to SDP's licence wording.

1 Introduction

This document is structured so that Chapter 2 provides Sydney Water's high level position on IPART's stakeholder questions, and Chapters 3–9 cover our detailed comments.

The appendices of our submission have been provided to IPART on a confidential basis for commercial in confidence reasons.

The individual chapters address the following:

- Chapter 2: Response to IPARTs draft decisions provides Sydney Water's high level position on all decisions for stakeholders
- Chapter 3: Refining the regulatory framework provides Sydney Water's detailed comments on decisions 1–5
- Chapter 4: Ensuring incentives are proportionate to SDP's drought response role provides Sydney Water's detailed comments on decisions 6–13
- Chapter 5: SDP's revenue requirement and review of costs provides Sydney Water's detailed comments on decisions 14–43
- Chapter 6: Refining price structures provides Sydney Water's detailed comments on decisions 44–48
- Chapter 7: Refining cost sharing rules provides Sydney Water's detailed comments on decisions 49–53
- Chapter 8: Treatment of membrane replacement costs provides Sydney Water's detailed comments on decisions 54–57
- Chapter 9: Prices and impacts provides Sydney Water's detailed comments on decision 58

2 Response to IPART's Draft Decisions

We have outlined Sydney Water's high level position on each of IPART's Draft Decisions below.

Length of determination [1]

1. Adopt a 5-year determination period from 1 July 2017 to 30 June 2022.

Sydney Water supports the draft decision. Many of the uncertainties noted in our submission to the Issues Paper have now been resolved, and a 'standard' 5-year determination period is appropriate.

SDP's operating modes [2]

- 2. Simplify SDP's modes of operation modes for pricing purposes to the following water security (shutdown), restart, and plant operation. In doing so, we have:
 - removed the intermediate shutdown modes in the 2012 Determination ie, short-term, medium-term and long-term shutdown
 - retained the definitions of plant operation and restart periods in the 2012 Determination (subject to clarifying changes and consequential changes following amendments to the definition of "Shutdown Period"), and
 - redefined the shutdown period to begin from the 11th consecutive day of no production.

Sydney Water supports the draft decision. The removal of intermediate shutdown modes is consistent with the primary drought response role of SDP and the operating rules in the Metropolitan Water Plan.

When combined with changes to the abatement mechanism, which will allow SDP to 'catch-up' on production shortfalls, defining a shutdown period as starting from the 11th consecutive day of no production means SDP retains flexibility to manage temporary disruptions (eg, poor ocean water quality) without financial penalty – consistent with the original intent of the short-term shutdown mode.

Regulating SDP's prices [3-4]

3. Continue regulating SDP's prices outside drought for all customers.

Sydney Water supports the draft decision, which is consistent with our submission to the Issues Paper.

- 4. Retain the nil price outside drought to Sydney Water except in the exceptional circumstances specified in the Water Supply Agreement, which are to:
 - mitigate the effects of a public health incident, or
 - ensure security of supply or network stability during periods of outages, unavailability or maintenance on any water industry infrastructure in Sydney Water's areas of operations.

Sydney Water supports the draft decision, which is consistent with our submission to the Issues Paper.

Cost pass-through mechanism [5]

5. Not include a general cost pass-through mechanism in the 2017 Determination.

Sydney Water supports the draft decision, which is consistent with our submission to the Issues Paper.

Abatement mechanism [6-13]

- 6. Broaden the abatement mechanism to apply uniformly during drought from 1 July 2018. This means:
 - SDP's fixed charges would be abated for shutdown and restart days during drought resulting from:
 - o events within SDP's control, and
 - o insurable events outside SDP's control.
 - the daily volumes produced on these shutdown or restart days (ie, 0 ML) would be included in the abatement factor, and
 - the abatement factor would apply to SDP's fixed daily charges during these shutdown and restart days.

Sydney Water supports broadening the abatement mechanism for SDP. SDP should have financial incentives to achieve full production in times of drought, as well as maintaining its availability role at all times.

We note that the revised abatement mechanism seeks to exclude events that are (1) outside the control of SDP, and (2) considered 'uninsurable' on reasonable commercial terms. This may present practical difficulties for Sydney Water (and other SDP customers), given that details of SDPs insurance are confidential. We note that the views of IPART's efficiency reviewers may only be valid at a point-in-time. Sydney Water would therefore like to better understand IPART's view on the processes that might be followed to assess the commercial reasonableness of SDP's insurance coverage after an abatement event has occurred.

Sydney Water has also reviewed the draft wording of the abatement mechanism, and considers that it may inadvertently exclude insurable events during drought.

- 7. Provide SDP with an 8-month 'grace' period from abatement when the plant first responds to a drought period under the 70/80 rule:
 - The daily volumes of production will not be included in the abatement factor for an 8-month period, commencing on the day when dam levels first fall below 70% since they were last above 80%.
 - The abatement factor will, however, still apply to all daily fixed charges during a plant operation period including for any plant operation period that falls within the 8-month 'grace' period from abatement.

Sydney Water supports the introduction of an eight month grace period, as it addresses an important anomaly in the 2012 price determination – that is, despite Sydney approaching drought, there was a financial incentive for SDP to dispose of water during restart rather than supply it to customers. The removal of this anomaly is particularly important given the change in operating rules in the 2017 Metropolitan Water Plan (eg, the lowering of the drought response trigger to 60 per cent dam storage levels).

We note that any abatement of fixed charges that could apply in a restart period only relates to SDPs performance in a previous drought operation period. Ideally, however, the application of abatement should occur as soon as practicable after the relevant events, particularly if there are financial consequences.

- 8. Align the abatement mechanism with the design parameters of the plant by:
 - Removing the 250 ML cap on daily volumes for calculation of the abatement factor applied to daily fixed charges.
 - Retaining the averaging period of 365 days for calculation of the abatement factor.
 - Introducing a true-up of fixed charges to claw back any over-recovery of revenue over a single episode of drought, which:
 - o includes holding costs calculated using the relevant WACC, and
 - is payable at the end of a drought response period.
 - Resetting the abatement factor to one, if the plant exits drought with an abatement factor above one.
 - Retaining and using the abatement factor, if the plant exits drought with an abatement factor less than one.

Sydney Water supports the draft decision to remove the daily water volume cap for calculation of the abatement factor, which is generally consistent with our submission to the Issues Paper. However, we note that redundancy in plant and equipment means that SDP can perform many maintenance activities (both planned and unplanned) without reducing drinking water production. A 365-day averaging period for calculation of the abatement factor appears overly generous, and shorter averaging (eg, monthly) would provide a better incentive framework.

If IPART's objective is to align the abatement regime to the plant's design parameters, it should recognise that the plant is designed to provide two essential services: being available to provide supply (at all times), and producing water (when switched 'on' in its various supply modes). IPART's terms of reference for this review are similarly framed to provide regulated prices for both services. Therefore, we believe it would be in the public interest to extend the abatement regime to cover periods when the plant is not providing its availability service.

Abatements serve to encourage strong performance. The volumetric abatement regime addresses the supply service. However, the availability service is an equally critical foundation of the plant's role. If IPART seeks to incentivise the plant to perform strongly for the community it serves, it should implement an abatement regime for the availability mode. This will encourage SDP to ensure the plant is kept in an optimal state of readiness at all times.

The volumetric abatement regime is aligned to the core purpose and function of the plant's active modes – i.e., maximising production volumes. An abatement mechanism for the availability mode could similarly reference the plant's designed functions and purpose in that mode, and focus on appropriate maintenance and testing.

9. Exempt SDP from abatement on any day when it is required to reduce production below 250ML per day in order to comply with a law or a binding direction, order or similar made under a law.

Sydney Water generally supports the draft decision. However, we note that SDP has discretion about how to respond to a binding direction or similar order made under a law. For example, there may be different operational responses, and the best solution will likely require good collaboration with other stakeholders in responding to the direction. If this is not done well, production may fall below the required volumes. This should be considered in the design and application of the abatement mechanism.

10. Not exempt SDP from abatement when Sydney Water is unable to accept water on a day.

We agree that SDP should not be held to account for events that are outside their control (where insurance is not available on reasonable commercial terms). As such, Sydney Water agrees that we should bear the consequences of not being able to accept water on a day, and we therefore need to take all prudent and efficient steps to maintain an ability to accept water. However, we note that our inability to accept water may, in turn, be due to the actions of another party (eg, lack of electricity supplies or damage caused by others). For consistency, Sydney Water should not be required to re-imburse SDP for these events.

Sydney Water also questions why payments to SDP to cover the cost of abatement (where Sydney Water was the cause) need to occur 'outside' the determination framework. SDP may be exposed to abatement for a period of time with no apparent means of enforcing the recovery of those costs. In addition, the absence of a price or methodology could create ambiguity about the amount that needs to be paid. Given the relevant abatement amount can be readily calculated, Sydney Water would prefer to avoid any future uncertainty by setting a price or methodology as part of SDP's price determination.

11. Exempt SDP from abatement when the plant is responding to Sydney Water in one of the exceptional circumstances specified in the Water Supply Agreement.

In our comments on draft decision 8, we call for an extension of the abatement mechanism to deal with non-drought periods. The application of an abatement framework to emergency supply situations is one option that could be considered to help achieve this outcome.

12. Continue to apply the abatement factor to all daily fixed charges, which includes base, incremental and membrane service charges under our draft price structures.

Sydney Water supports the draft decision. It may also be appropriate to include the pipeline charge as an abatable charge, as loss of the pipeline may affect the ability of SDP to supply water.

13. Deem the Daily Volume on 364 Availability Days preceding the first Availability Day equal to 250 ML per day for the 2017 determination period where no prior history exists.

Sydney Water supports the draft decision.

Notional revenue requirement [14]

14. Set SDP's notional revenue requirement in each year of the 2017 determination period for:

- the plant in operation and water security (shutdown) modes, as shown in Table 4.1, and
- the pipeline across all modes of operation, as shown in Table 4.2.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

Application of Energy and Efficiency Adjustment Mechanisms [15-16]

15. Include an allowance into prices over the 2017 determination period for the losses made on the sale of SDP's surplus energy while it was shutdown over the 2012 determination period of \$28.9 million or \$5.8 million per year (real \$2016-17 and including financing costs). This is consistent with the Terms of Reference.

Sydney Water supports the draft decision, which is consistent with the prescribed methodology.

16. Include an efficiency carryover of \$50,000 p.a. for the first three years of the 2017 determination period based on applying the 2012 EfAM methodology.

Sydney Water supports the draft decision, which is consistent with the prescribed methodology.

Prudent and efficient past capital expenditure [17]

 Include in the RAB over the 2012 determination period prudent and efficient capital expenditure for the plant and pipeline as set out in Table 5.1 and Table 5.2. Our decision accepts SDP's proposed costs.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

Expenditure on plant and pipeline over the 2017 determination period [18-23]

 Set the efficient level of SDP's operating expenditure (plant and corporate) in water security (shutdown) mode as outlined in Table 5.3. Our draft decision is \$38.7 million (or 32%) lower than SDP's proposed costs.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

19. Set the efficient level of SDP's operating expenditure (plant and corporate) in plant operation mode as outlined in Table 5.4. Our decision is \$55.3 million (or 12%) lower than SDP's proposed costs.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

20. Set the efficient level of SDP's one-off operating expenditure (including energy) to transition to restart as outlined in Table 5.5. Our draft decision is on average \$29.7 million (or 76%) lower than SDP's average proposed costs.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

21. Set the efficient level of SDP's one-off operating expenditure (including energy) to transition to shutdown as outlined in Table 5.6. Our draft decision accepts SDP's proposed costs.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

22. Include in the RAB the forecast capital expenditure for the plant as outlined in Table 5.7 over the 2017 determination period. Our draft allowance is \$12 million (or 478%) higher than SDP's total proposed costs.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

23. Set forecast capital and operating expenditure over the 2017 determination period for the pipeline as outlined in Table 5.8. Our draft decision accepts SDP's proposed costs.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

Membrane replacement expenditure [24-25]

- 24. Set SDP's prudent and efficient capital expenditure at \$30 million for a full membrane replacement on the first restart in the 2017 determination period. These costs would be payable at most once in the 2017 determination period. For clarity, this includes a restart:
 - triggered by drought response, or
 - discretionary use of the plant by third-party customers outside drought.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

25. Not provide any further allowances for the ongoing replacement of membranes in the 2017 determination period.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts. However, Sydney Water would like to understand the likely process for on-going membrane replacement in future determination periods.

Ex-post review of uncertain expenditure [26]

26. Not include in the RAB the prudent and efficient capital costs of an extra drinking water pump (\$2.1 million) and a skid test unit (\$1 million) given the uncertainty in timing of this expenditure. Rather, these costs would be re-assessed for efficiency and included (with holding costs at WACC) at the next review of SDP prices.

Sydney Water supports the draft decision, which is consistent with recommendations provided by IPART's efficiency review experts.

Energy costs [27-31]

27. Set energy cost allowances as outlined in Table 6.2.

See our comments on draft decision 28.

Continue to set energy cost allowances based on market based estimates of efficient energy costs.

Sydney Water notes that the efficient benchmark energy prices recommended by IPART's consultants are above the contract prices secured by SDP under its competitively sourced long-term energy supply contracts.

While Sydney Water notes IPART's preference to set prices in this way, we consider the framework does not adequately reflect the outcome that would likely apply in a competitive market. In a market, competitive pressures mean a firm would share a portion of any gains (and losses) with customers, for example via a change in retail price (either directly, or via investment in other efficiencies that put downward pressure on price). However, given that benchmark energy prices are re-set at each IPART review, it is likely that savings which arise due to SDPs energy contracting strategy will always be

retained in full by SDP. Sydney Water believes the framework could be improved by providing avenues for customers to share in the benefits (and risks) of SDP's contracting strategies.

29. Set efficient benchmark energy unit prices as outlined in Table 6.3.

See our comments on draft decision 28.

30. Set benchmark energy volumes as outlined in Table 6.6.

Sydney Water supports the draft decision. We note that energy volumes in the 2017-2022 period will reflect the performance of newly installed membranes if the plant is called into operation.

Maintain the cost pass-through mechanism used in the 2012 Determination for SDP's energy network costs.

Sydney Water supports the draft decision.

Fixed network energy should not include additional demand charges that are caused by storm-related reinstatement works. Sydney Water suggests the pass-through of network energy costs should be based on a benchmark volume (eg, the average amount used during a shutdown period) rather than actuals.

Regulatory Asset Base [32-37]

32. Set the opening RAB at 1 July 2017 by rolling the historical RAB forward from 2011-12 to 2016-17 as outlined in Table 7.1

Sydney Water supports the draft decision.

33. Roll forward the RAB from 1 July 2011 to 30 June 2012 by taking account of actual CPI, but not updating for actual capital expenditure.

Sydney Water supports the draft decision.

34. Correct asset category values used in the 2012 Determination to roll the RAB forward from 1 July 2012 to 30 June 2017.

Sydney Water supports the draft decision.

35. Correct asset lives used in the 2012 Determination to roll the RAB forward from 1 July 2017.

Sydney Water supports the draft decision.

36. Maintain our standard practice of using allowed depreciation to roll forward the historical RAB.

Sydney Water supports the draft decision.

37. Adopt the value of the RAB in each year of the 2017 determination period as set out in Table 7.5.

Sydney Water supports the draft decision.

Return on capital [38-39]

38. Apply a real post-tax WACC of 4.9% for the purposes of calculating an appropriate rate of return on SDP's assets.

Sydney Water supports the draft decision.

39. Set an allowance for return on capital as outlined in Table 7.7.

Sydney Water supports the draft decision.

Return of capital [40]

- 40. Accept SDP's infrastructure based asset categories, with minor adjustments, as set out in Table 7.8 and
 - adjust SDP's proposed new and existing asset lives as set out in Table 7.9, and
 - set an allowance for regulatory depreciation as set out in Table 7.10.

Sydney Water supports the draft decision.

Regulatory tax [41-43]

41. Adopt the regulatory tax allowance as set out in Table 7.11.

Sydney Water supports the draft decision.

42. Maintain the current statutory corporate tax rate of 30% to calculate SDP's taxation allowance for the purposes of setting prices over the 2017 determination period.

Sydney Water supports the draft decision.

43. Adopt SDP's proposed approach to the treatment of tax loss carryovers for the distribution pipeline.

Sydney Water supports the draft decision.

Price structures [44-48]

- 44. Split water service charges into:
 - a base service charge (\$/day), reflecting SDP's efficient fixed costs when in water security (shutdown) mode, and
 - an incremental service charge (\$/day), reflecting the difference in SDP's efficient fixed costs between water security (shutdown) and plant operation modes.

Sydney Water generally supports the draft decision. However, as noted in our comments on draft decision 49, Sydney Water has some concerns about the proposed cost sharing rules for the incremental service charge. Specifically, under certain circumstances there may be perverse outcomes including an avenue for water customers to achieve opportunistic financial gains.

45. Retain a water usage charge (\$/ML) for supplying non-rainfall dependent drinking water.

Sydney Water supports the draft decision.

46. Continue transition charges, which reflect the efficient one-off operating costs of moving from shutdown into plant operation mode and vice versa.

Sydney Water supports the draft decision.

- 47. Ensure transition charges (for restart and shutdown) are payable only once. Either:
 - when triggered by dam storage levels when the plant is responding to drought; or
 - upon notice by a customer to start or cease supply outside drought.

Sydney Water supports the draft decision.

48. Continue to set a mode-independent pipeline charge.

Sydney Water supports the draft decision.

Cost sharing rules [49-53]

- 49. Change the cost sharing rules in the event that SDP serves multiple customers to reflect the desalination plant's primary role as a drought response measure, such that:
 - Base service charges (and pipeline service charges) are always paid for by impactors
 - Water usage charges are always paid for by beneficiaries, and
 - Incremental service charges and transition charges are paid by impactors when the plant operates as a drought measure and beneficiaries when it operates commercially outside of drought.

Sydney Water supports the draft decision to always share the base service charge amongst impactors, and the draft decision to always share water usage charges amongst beneficiaries.

Sydney Water does not support the draft decision to share incremental service charges on an impactor pays basis during drought. IPART's analysis of the cost sharing rules does not consider treatment costs for water supplied by Sydney Water. When water sources are compared on a like-for-like basis, Sydney Water has identified a scenario where desalinated water may be cheaper than dam water. This could lead to perverse outcomes (eg, an opportunistic water user switching to SDP during drought).

The costs of producing drinking water (i.e., the incremental service and water usage charges) are appropriately shared amongst the customers of SDP (i.e., beneficiary pays), since the costs needed to maintain and trigger the water security benefits of SDP have already been fully recovered from impactors. Further detailed comments are contained in chapter 7.

50. Define impactors as bulk water users who directly affect Greater Sydney's water storage levels and cause the need for SDP to exist. Specifically, impactors source water from dams supplying Greater Sydney (WaterNSW) and from the desalination plant (SDP) when it operates.

Sydney Water supports the draft decision.

51. Share base service charges between impactors based on their proportion of total system draw that day.

Sydney Water supports the draft decision. As a minor issue, however, Sydney Water notes that it may be difficult for us to independently verify charges levied by SDP, as we may not have access to all the relevant data (eg, for privacy reasons). We also note that SDP may, for similar reasons, have difficulty sourcing water use data for all impactors.

- 52. Share incremental service charges 'on the day' between:
 - impactors during drought based on their proportion of total system draw that day, and
 - beneficiaries outside drought based on their proportion of desalinated water sold that day.

Sydney Water supports the draft decision that cost sharing is best determined by the relative proportion of water taken 'on the day'. However, as outlined in our response to draft decision 49, Sydney Water does not agree with sharing the incremental service charge amongst impactors during drought.

53. Share one-off transition charges (to restart and shutdown):

- between existing impactors based on their total system draw over the 12 months prior to a
 restart for drought and the entire drought episode prior to a shutdown on the completion of
 drought, and
- equally by the beneficiaries that request the restart or shutdown outside drought (ie, issue a notice for SDP to start or cease supply).

Sydney Water supports the draft decision.

Treatment of membrane replacement costs [54-57]

- 54. Establish a separate membrane asset base (membrane RAB) as set out in Table 10.1:
 - with an opening value of \$30 million in the year of first restart
 - adopting an asset life for membranes of 8 years
 - not adding any further capital expenditure for the ongoing replacement of membranes, and
 - rolling forward the membrane RAB until the membranes fully depreciate.

Sydney Water supports creating a separate membrane RAB.

The starting membrane RAB is based on replacing all membranes on first restart. However, it is possible some membranes may be replaced in 2017 or 2018 as part of storm-related reinstatement works. Sydney Water seeks assurance that membranes replaced as part of reinstatement works will be excluded from the starting membrane RAB.

After full replacement on restart, the draft determination does not anticipate any further replacements in the 2017-2022 price period. However, if the plant restarted and then continued to operate into the following (2022-2027) price period, it is likely to be prudent and efficient to replace a portion of the membranes for energy efficiency reasons. Sydney Water would like to understand how any such replacements will change the membrane RAB.

55. Set separate charges to recover the capitalised costs of a full membrane replacement over the 2017 determination period, which includes the:

- schedule of membrane service charges as outlined in Table 10.2, and
- one-off charges for residual membrane costs as outlined in Table 10.3.

Sydney Water supports the draft decision.

- 56. Apply the following charging rules for membrane costs:
 - membranes paid for in full by impactors when the plant is triggered by drought
 - membranes paid for in full by beneficiaries when the plant operates outside drought, and
 - membrane costs revert to impactors if drought occurs before they are paid in full by beneficiaries.

Given the circumstances, with a planned full replacement of membranes due to the current extended shutdown, Sydney Water supports the draft decision and cost sharing rules.

- 57. Review the prudent and efficient capital costs of membranes associated with supply for emergency response to Sydney Water (ie, exceptional circumstances specified in the Water Supply Agreement) ex-post at the next determination period.
 - Where appropriate, these costs would be rolled into the historical RAB, including holding costs using the relevant WACC.
 - These membranes costs would be paid for in full by impactors.

Sydney Water supports the draft decision, given neither the occurrence of emergency events or the specific costs needed for SDP to provide an emergency response, can be known in advance.

Draft prices [58]

58. Set draft prices for the 2017 determination period as outlined in Table 11.1.

Sydney Water supports the draft decision.

3 Refining the regulatory framework

This chapter provides our detailed comments on draft decisions 1–5.

Key messages

- The removal of intermediate shutdown modes is consistent with the primary drought response role of SDP and the revised operating rules in the Metropolitan Water Plan.
- Defining a shutdown period as starting from the 11th consecutive day of no production means SDP retains flexibility to manage temporary disruptions without financial penalty, consistent with the original intent of the short-term shutdown mode.
- Sydney Water supports the decision to continue regulating prices for all customers, including for situations where Sydney Water may request water outside of drought to help mitigate the effects of an emergency.

3.1 Simplification of operating modes and prices

The 2012-2017 price determination included several shutdown modes, which were based on the Operate and Maintain (O&M) contract for the desalination plant. The shutdown modes in the O&M contract were proposed by the operator in response to requirements for operational flexibility.

The Network Operators Licence for SDP codifies the operating rules of the desalination plant arising from the 2010 Metropolitan Water Plan. The 2010 rules were informed by costs in the O&M contract for different shutdown modes, but ultimately based on modelling of the demand-supply balance in Sydney under a range of climate scenarios. This modelling showed that the plant was most suited to a drought response role, with continuous production in the immediate lead up to, and during, drought. However, the primary benefit of SDP was being available to provide a drought response, if required in the future.

Operating rules for the plant were set based on dam storage levels, which would determine when SDP would be required to start and stop producing drinking water. The 2017 Metropolitan Water Plan recently added the concept of a minimum run time, which is designed to keep the plant operating until sufficient time has passed that we can be confident a drought episode has ended. The various operating modes from the O&M contract therefore do not feature in the operating rules for SDP. IPART's draft decision to remove the intermediate shutdown modes from SDP's pricing determination is consistent with the primary drought response role of SDP and the operating rules. The conclusions of Atkins-Cardno on this matter appear reasonable – i.e., that a decision to enter either a medium or long-term shutdown mode is unlikely under the current operating rules.

When combined with changes to the abatement mechanism, which allow SDP to 'catch-up' on production shortfalls, defining a shutdown period as starting from the 11th consecutive day of no production means SDP retains flexibility to manage temporary disruptions (eg, poor ocean water quality) without financial penalty – which was the original intent of the short-term shutdown mode.

3.2 Unregulated price agreements outside drought

While there may be economic arguments for increasing SDP's operational flexibility, any changes need to be consistent with the complex and intricate suite of governance arrangement that were originally created around the plant's operations. Sydney Water supports IPART's draft decision to continue to regulate prices for all customers, both inside and outside drought, in line with the financial indifference principle in IPART's Terms of Reference.

4 Regulatory incentives for SDPs drought response role

This chapter provides our detailed comments on draft decisions 6–13.

Key messages

- As a non-rainfall dependent source of drinking water, the desalination plant contributes to water security for Sydney by being available to produce water. However, the abatement regime only relates to periods of water production.
- Sydney Water is concerned that the abatement regime does not apply consistently to all services of the plant. This is not optimal from a policy perspective, in terms of driving the best performance for the community the plant serves.
- It is entirely appropriate for SDP to bear the risk of some financial consequence for poor delivery of both services (i.e., availability and production), as this will incentivise performance at all times.
- Sydney Water would like to better understand IPART's view on the processes that might be followed to assess the commercial reasonableness of SDP's insurance coverage in relation to potential abatement events, given the confidentiality of SDP's insurances.
- The draft wording of the abatement mechanism may inadvertently exclude insurable events that occur during drought. This may require an amendment to SDP's Network Operator's Licence or revised definitions in the determination.
- SDP can be abated if Sydney Water is not able to accept water, with IPART suggesting the cost be recovered from Sydney Water 'outside the determination'. Given abatement amounts can be readily calculated, the absence of a price or methodology creates unnecessary ambiguity and uncertainty for all parties.

4.1 Abatement across all services provided by SDP

Abatement mechanisms involve deducting an amount from the fee otherwise payable to a service provider, and are designed incentivise good performance. Abatement is a standard feature of modern service contracts, and is an important mitigation against the risk that a provider will not perform to the level expected by customers.

Australian Government guidelines¹ outline several principles to consider when designing an integrated payment and abatement framework for service delivery arrangements, including:

• Payments should only be made to the extent that a service is available.

¹ National Public Private Partnership Guidelines – Volume 2: Practitioner's Guide, p 68.

- Payments should not contain a fixed element which is always received irrespective of performance.
- The payment mechanism should seek to make abatements for sub-standard performance.
- The degree of abatement should reflect the severity of failure.
- Performance measurement should be linked to an agreed set of standards or performance indicators.

Payment mechanisms that do not reflect these principles are unlikely to result in the best outcome for customers. For example, customers could be left in a situation where money is being paid to a provider, but no (or very poor) service is provided in return.

As outlined in SDP's Network Operator's Licence, and the Minister's Terms of Reference to IPART for this price review, SDP provides two key services:

- a) the supply of non-rainfall dependent drinking water to purchasers; and
- b) the making available of the desalination plant so as to supply non-rainfall dependent drinking water.

The abatement framework in the 2017 draft determination is based on the application of an abatement factor to certain daily charges (i.e., the base service charge, incremental service charge, and membrane service charge). However, the abatement factor only relates to shortfalls in drinking water production. In other words, the abatement mechanism only applies to half of the services provided by SDP. If IPART's objective is to align the abatement regime to the plant's design parameters, it should recognise that the plant provides two distinct services and the abatement mechanism should be tailored to appropriately cover all the services provided by SDP: being available to provide supply (at all times), and producing water (when switched 'on' in its various supply modes).

Sydney Water considers the 'production only' abatement mechanism to be a weakness in the draft determination, since it leaves our customers potentially exposed to on-going payments even though a corresponding service is not being provided.

Sydney Water therefore strongly believes the abatement mechanism should be extended to cover periods when SDP is not providing its availability service outside drought (e.g., the plant could not respond if a restart trigger were to occur on the day).

The volumetric abatement regime is aligned to the core purpose and function of the plant's active modes – i.e., maximising production volumes. An abatement mechanism for the availability mode could similarly reference the plant's designed functions and purpose in that mode, such as appropriate maintenance and testing.

4.2 Uninsurable events

In draft decision 6, IPART provides for a revised abatement mechanism that seeks to exclude events that are:

- 1. outside the control of SDP, and
- 2. considered 'uninsurable' on reasonable commercial terms.

While we are generally supportive, there are likely to be practical difficulties for Sydney Water (and other SDP customers) in the application of this approach. In particular, details of SDP's insurance policies are confidential and SDP would have an incentive to overstate the difficulty and/or cost of procuring insurance for certain types of events.

Sydney Water would like to better understand IPART's view on the processes that might be followed to assess the commercial reasonableness of SDP's insurance coverage in relation to potential abatement events. For example, would IPART need to intervene and make a formal decision about whether or not SDP's decisions about insurance coverage were 'reasonable', and therefore whether or not abatement should apply to an event?

While the terms of SDP's insurances have been assessed by IPART's advisors as part of this price review, the results are confidential and may not have addressed these issues. In any case, premiums in some insurance markets can display a distinct 'boom-bust' cycle. As such, conclusions at a point in time about the availability of insurance on reasonable commercial terms may become less valid over time.

For the avoidance of doubt, we would also expect that SDP would be subject to abatement for events within their control regardless of whether or not insurance is available.

4.3 Potential non-abatement for insurable events during drought

Clause A2 of SDP's Network Operator's Licence specifies the requirements for SDP to maintain and operate the desalination plant and associated infrastructure. This includes:

- a) Maintaining and operating the plant in accordance with Good Industry Practice (i.e., the drought response role), and
- b) Maximising the production of drinking water when dam levels fall below a defined threshold (70%) and continue to do so until dam levels rise above a defined threshold (80%).

Paragraph (b) defines the drought response obligation for SDP, a concept that IPART has included in the draft determination as part of the abatement regime. However, paragraph (c) of the Licence relaxes the obligations of paragraph (b) under certain circumstances. Specifically, SDP is relieved of the obligation to maximise drinking water production as follows:

- (i) when the Water Industry Infrastructure is in a Restart phase of production; or
- (ii) during the time and to the extent that such compliance is prevented wholly or in part by an event outside the reasonable control of the Licence Holder.

Sub-clause (ii) makes no distinction between insurable and uninsurable events. In addition, the new definition of Drought Response Obligation introduced in the draft determination (which determines if / when abatement can be triggered) simply refers back to the Network Operator's Licence. Therefore, if a storm event were to occur and damage the plant during drought, this would temporarily end SDP's drought response obligation and it appears that abatement would not apply. This may require a change to the Network Operator's Licence or a re-drafting of the determination.

4.4 Abatement for Sydney Water being unable to accept water

We agree that SDP should not be held to account for events that are outside their control (where insurance is not available on reasonable commercial terms). As such, Sydney Water agrees that we should bear the consequences of not being able to accept water on a day, which would incentivise us to take all prudent and efficient steps to maintain an ability to accept water.

However, Sydney Water questions why payments to SDP to cover the cost of abatement (where Sydney Water was the cause) need to occur 'outside' the determination framework. While SDP has some rights to recover certain costs if Sydney Water causes SDP to suffer abatement, there may be a time 'allowance' before this can be invoked. As such, SDP may be exposed to abatement for a period of time with no apparent means of enforcing the recovery of those costs. In addition, the absence of a price or methodology could create ambiguity about the amount that needs to be paid. We also note that the reasons why Sydney Water may not be able to accept water on a given day may, despite our best efforts, be due to factors outside our control. In this situation, we may be required to reimburse SDP and attempt to recover those costs from a third party. For consistency, we consider that Sydney Water should not be required to reimburse SDP for events that are also outside the control of Sydney Water.

Given the relevant abatement amount can be readily calculated, Sydney Water would prefer to avoid any future uncertainty by setting a price or methodology as part of SDP's price determination.

4.5 Managing temporary problems without abatement

IPART has made a draft decision to change the abatement mechanism to allow SDP to recover from periods where water production falls below the average design capacity of the plant². The revised abatement mechanism also allows SDP to build a 'bank' of higher than average water production to offset periods of lower production. So long as SDP can achieve an average annual volume equivalent to 250 ML a day in a rolling 365-day period³, it will not be subject to abatement.

Sydney Water's submission to the Issues Paper was supportive of changes to the abatement mechanism to provide SDP with greater flexibility to manage temporary production problems. However, we proposed that average water production be measured monthly. In the draft determination, IPART makes the following observation about our proposal⁴:

a monthly averaging period of abatement payments would not provide SDP with the flexibility it may require to manage the plant during prolonged drought. We estimate that within a month SDP could on average offset 1.8 days of zero production without abatement. If the plant needed to address an engineering fault that required a longer period of shutdown, it would have to enter

² Annual average output of 250 ML a day, being the nominal capacity of 266 ML a day combined with a design requirement that the plant be available for 94 per cent of the year (i.e., $266 \times 0.94 = 255$).

³ With carve-outs of certain days where output was affected by uninsurable events beyond the control of SDP.

⁴ IPART Draft Report – Sydney Desalination Plant – Review of prices from 1 July 2017 to June 2022, p 40.

a short-term shutdown to avoid abatement. For this reason, Sydney Water's submission envisaged continuation of shorter shutdown modes.

To clarify our submission, Sydney Water did not envisage that SDP would have the ability to enter a shutdown mode for the purposes of avoiding abatement. Sydney Water notes that redundancy in certain equipment (eg, there is a 'spare' reverse osmosis train) allows parts of the plant to be taken offline for maintenance without reducing water production below full capacity. The ability for the operator to perform maintenance activities (both planned and unplanned) is therefore not limited to a narrow window of 1.8 days (approximately 42 hours) each month.

IPART's draft decision to measure, for the purposes of calculating abatement, average production over the preceding 365 availability days provides a significantly weaker incentive for SDP to maintain equipment with a view to maximising water production during drought.

5 SDP's revenue requirements and review of costs

This chapter provides our detailed comments on draft decisions 14–43.

Key messages

- Sydney Water notes IPART's preference to use an estimate of efficient benchmark energy prices, rather than contract prices, when setting SDP's allowance for energy costs. Sydney Water believes the framework could be improved by providing avenues for customers to share in the benefits, as they would in a competitive market.
- Membrane assets may have an economic life that is shorter than the eight years
 proposed in the draft decisions. A shorter life would affect the revenue requirement.
- Sydney Water considers that the fixed network energy pass-through in water security mode should not include additional demand charges that are caused by the preceding storm-related reinstatement works.

5.1 SDP's revenue requirement

Sydney Water generally supports the draft decisions regarding the revenue requirements of SDP over the 2017-2022 price period, and we welcome the reduction in customer prices over this period.

As noted in our detailed comments in chapter 8, the reverse osmosis membranes may have an economic life that is less than the eight years assumed when estimating the notional revenue requirement. A shorter life would increase the revenue requirement, as the costs of membranes would need to be recovered over a shorter period of time.

5.2 Expenditure review

Sydney Water notes that the expenditure proposals have been reviewed in detail by Atkins-Cardno, by a team with expertise in desalination processes. Some sections of their review report have been redacted due to commercially sensitive information, limiting the opportunity for us to make detailed comments. However, the report has all the appearances of a thorough process, with opportunities for SDP to provide comment and/or additional supporting information.

We welcome the emphasis on providing incentives for SDP management to find further efficiencies, which may include opportunities to reduce the base water security charge at future price reviews.

5.3 Energy costs

5.3.1 Framework for energy pricing

Sydney Water notes that the efficient benchmark energy prices recommended by IPART's consultants are above the contract prices secured by SDP under its competitively sourced long-term energy supply contracts. IPART states that SDP will be entitled to fully retain the benefits of any gap between contract and benchmark prices (and would fully bear the extra cost should the reverse situation occur in future). IPART compares this to other forms of financial arrangements (eg, hedging for currency risk), noting that it is likely to provide a stronger incentive for SDP to manage their energy costs compared to a situation where contract costs are simply passed on directly to customers.

While Sydney Water notes IPART's preference to set prices in this way, we consider the framework does not adequately reflect the outcome that would likely apply in a competitive market. In a market, competitive pressures mean a firm would likely share a portion of any gains (and losses) with customers, for example via a change in retail price – either directly, or via investment in other efficiencies that put downward pressure on price. However, given that benchmark energy prices are reset at each IPART review, it is likely that savings which arise due to SDPs energy contracting strategy will always be retained in full by SDP. Sydney Water believes the framework could be improved by providing avenues for customers to share in the benefits (and risks) of SDP's contracting strategies.

5.3.2 Pass-through of storm-related increases in network energy costs

The prices charged by network energy providers include a capacity component that varies based on the maximum energy demand placed on the electricity network during a defined period. The period varies amongst suppliers, but ranges from one to 12 months in most cases. In the case of the desalination plant, Sydney Water understands that the network provider levies a capacity charge that is based on the maximum energy demand experienced in the past 12 months. The implication of this charging structure is that even short-term or temporary spikes in demand on the network will result in a higher energy bill for the next 12 months.

As part of the storm-related reinstatement works, it is likely that demand on the energy network will increase, resulting in a higher capacity charge. However, once that work is complete, the intention at this stage is that the plant will return to water security mode.

Sydney Water considers that the fixed network energy in water security mode should not include additional demand charges that are caused by the preceding storm-related reinstatement works. As an alternative, Sydney Water suggests the pass-through of network energy costs during this period (ie, after reinstatement is complete and the plant returned to water security mode) could be based on a benchmark volume (eg, the average amount used during a shutdown period) rather than actuals.

6 Refining price structures

This chapter provides our detailed comments on draft decisions 44–48.

Key messages

- The refinements to the structure of SDP's prices should improve transparency and will also assist in setting appropriate cost sharing rules amongst water users.
- Sydney Water is supportive of the draft decisions that IPART has made to refine the price structures for SDP's services.

Sydney Water is generally supportive of the draft decisions that IPART has made to refine the price structures for SDP's services. However, we would also like to clarify aspects of our earlier submission to IPART's Issues Paper.

6.1 Charges for the desalination plant

In terms of price structures, the main refinement proposed by IPART in the draft determination is to split the current daily service charge, which varied by mode, into two separate charges:

- 1. A mode-independent base water security charge, and
- 2. An incremental service charge that applies when the desalination plant supplies drinking water.

In our response to IPART's Issues Paper, Sydney Water expressed support for this change but questioned whether the allocation of costs between the two charges was appropriate. Our comments were made in the context of a table in the Issues Paper that provided estimates of prices under the new structure⁵.

In its draft determination and report, IPART stated the following in relation to our comments⁶:

[Sydney Water] recommended the base service charge be reduced so that it does not include any fixed operating costs of SDP. It is not clear if Sydney Water intends that the base service charge be reduced only when SDP is operating, or at all times (ie, when the plant is shutdown).

Sydney Water [also] opposed the proposed split between the base service charge and incremental service charge because it would pay most of the base service charge according to the impactor pays principle.

To clarify our original submission, Sydney Water was seeking to ensure that the base service charge includes all the costs needed to maintain the desalination plant in a state of readiness to be able to fulfil its drought response obligations – but no more. As a previous owner of SDP, Sydney Water has familiarity with the cost structures of the desalination plant. Our review of the indicative

⁵ IPART Issues Paper – Sydney Desalination Plant – Review of prices from 1 July 2017 to June 2022, p 24.

⁶ IPART Draft Report – Sydney Desalination Plant – Review of prices from 1 July 2017 to June 2022, p 108.

prices in the Issues Paper suggested that the base service charge may have included some cost elements that are only needed when the plant produces drinking water. In other words, the base service charge appeared too high, and may have included costs that go beyond simply maintaining the availability of the plant to meet a future drought response obligation. If this was indeed the case, the appropriate solution would have been to re-allocate some costs from the base service charge to the incremental service charge. This would result in a lower base service charge than the estimates suggested by IPART, and this would apply in all modes. To avoid any doubt, we support a base service charge that allows SDP to recover all prudent and efficient costs needed to maintain the availability of the plant to fulfil its drought response obligations.

Sydney Water would also like to clarify that our other comments in relation to the split between the base service charge and the incremental service charge were not specifically directed at lowering the percentage share of costs paid by Sydney Water. As outlined in our detailed comments on the cost sharing rules (see chapter 7), Sydney Water is only seeking to ensure that the regulatory pricing framework sends the appropriate price signals to all water users. If the correct principles are applied and it so happens that the application of those principles results in Sydney Water bearing most SDP's costs, we would be supportive – provided there are no unintended or perverse consequences that may distort the decisions of water users.

7 Refining cost sharing rules

This chapter provides our detailed comments on draft decisions 49-53.

Key messages

- Sydney Water is generally supportive of the proposed changes to the cost sharing rules, but does not support the draft decision to share incremental service charges on an impactor pays basis during drought.
- IPART's analysis of the cost sharing rules does not consider treatment costs for water supplied by Sydney Water.
- When water sources are compared on a like-for-like basis, there is a scenario where desalinated water may be cheaper than dam water. This could be exploited by an opportunistic water user to achieve a windfall financial gain during drought.

7.1 Sending the correct price signals

An important goal of regulatory pricing frameworks is to achieve economically efficiency outcomes, including technical, allocative and dynamic efficiency. Broadly speaking, this means setting regulated prices in such a way that:

- producers have incentives to minimise costs
- consumers have incentives to purchase from those producers that can meet their preferences at least cost, and
- the prices faced by current producers and consumers appropriately reflect the consequences of their decisions on future producers and consumers.

Pricing outcomes that do not satisfy these requirements impose an economic cost on the community. In other words, it would be possible to re-design the outcomes of the regulatory framework in such a way that the gains to one or more parties would exceed any losses experienced by others.

Regulated pricing frameworks that do not meet these efficiency goals have often been modified in order to achieve other policy objectives. Sydney Water believes the pursuit of these other policy objectives should be subject to careful analysis to ensure that:

- the net costs to the community are transparent, and
- unintended impacts can be identified, minimised or, where possible, removed.

Sydney Water considers that the cost sharing rules developed by IPART contain unintended consequences under certain scenarios. In particular, the draft decision to share incremental service charges on an impactor pays basis during drought could be exploited by an opportunistic water user to achieve a windfall financial gain. This outcome would violate allocative efficiency, and does not appear to be offset by the achievement of any other specific policy goals.

7.2 Dam water vs desalinated water

The production of drinking water from the desalination plant is an energy-intensive process, which means that water produced by the plant is likely to be always more expensive than water supplied from Sydney's network of water supply dams⁷.

WaterNSW calculates the sustainable yield of Sydney's water supply system. It is defined as the average annual demand for water that can be met sustainably over the long term⁸. Any measure that can provide additional water in the latter stages of a drought contributes to a higher yield. As a non-rainfall dependent source of drinking water, the desalination plant contributes to water security (i.e., improves the system yield) for Sydney by being available to produce water during times of drought. The additional cost of desalination can be viewed as an insurance premium against completely running out of water when droughts occur. From an economic efficiency perspective, it is appropriate that the water users which create the need for this additional source of water pay an appropriate contribution towards the extra costs of keeping the plant available for use. Sydney Water therefore supports the draft decision to share the base water security charge on an impactor pays basis.

The incremental service charge covers those additional operating costs that are only needed when the plant is producing drinking water. That is, the costs are specifically tied to the production of drinking water, and would not be incurred otherwise. In IPART's view⁹:

incremental service charges should be allocated to impactors in drought, given that ... incremental service charges relate to calling the plant into operation.

However, the relevant cost of 'calling the plant into operation' is the transition to restart charge. This cost is needed in order to complete all the steps necessary to move the plant from one state (ie, being available to produce water) to another state (ie, producing water).

It is important to emphasise that the desalination plant contributes to the sustainable yield of Sydney's water supply system mainly by being available to produce water, if needed, in times of drought. In fact, the desalination plant will continue making this contribution even if it never operates (ie, we never return to drought conditions). For example, the current estimate of the sustainable yield for Sydney includes a contribution from an expanded desalination plant, even though it does not currently exist and may never be built. In other words, the primary water security contribution of desalination comes from the option to call it into production if needed. The base water security charge covers all the costs needed to maintain this option, while the transition to restart charge covers all the costs needed to exercise that option. As such, the costs of producing drinking water (ie, the incremental service and water usage charges) are appropriately shared amongst the customers of SDP (ie, beneficiary pays), since the costs needed to maintain and trigger the water security benefits of SDP have already been fully recovered from impactors.

⁷ Local differences in factors such as topography may alter this balance in some areas, for example by requiring more energy for water distribution. Changes in drinking water standards or technology may also alter the cost differential in the future.

⁸ Greater Sydney's Water Supply System Yield, WaterNSW, August 2015, p 2

⁹ IPART Draft Report – Sydney Desalination Plant – Review of prices from 1 July 2017 to June 2022, p 114.

In our confidential submission to IPART's Issues Paper, we analysed a number of scenarios to assess the potential impacts of changes to the cost sharing rules. We identified scenarios where the price signals sent to water users may create a perverse incentive in favour of taking water from SDP rather than dam water. We also identified that sharing incremental service charges on a beneficiary pays basis appeared to resolve this issue.

IPART has sought to replicate this analysis in its draft report¹⁰. However, an important assumption in our analysis was that the final 'price' of each source of water must reflect all the component inputs. For example, unlike dam water, the desalination plant is simultaneously a provider of both bulk water and treated water. In other words, water purchased from SDP would be automatically inclusive of all necessary water treatment costs. However, when a customer purchases water from Sydney Water, there are two distinct sources of cost which must be recovered in the price:

- 1. Bulk water from WaterNSW,
- 2. Water treatment services provided by water filtration plants, including plants owned by Sydney Water as well as privately owned plants that operate under contract to Sydney Water.

In addition, Sydney Water recovers from customers the efficient costs of other water security measures, such as a water recycling scheme at Rosehill-Camellia and infrastructure constructed as part of the Replacement Flows project (eg, the Advanced Water Treatment Plant at St Marys).

In order to compare water sources on a like-for-like basis, these other components must be included in the final cost of water sold by Sydney Water. However, IPART appears not to have included these costs in its analysis of the cost sharing rules in Appendix E of its draft report. When water treatment costs are included, the gap between dam water and water from SDP will obviously narrow. Our analysis indicates that this still results in appropriate price signals to water users outside drought, as base water security costs are borne by impactors and the incremental operating costs are shared among beneficiaries (ie, third party direct customers of SDP). Inside drought, however, IPART's draft decisions allocate the additional operating costs among impactors. This has the unintended and perverse consequence of making dam water more expensive than water from SDP, creating an arbitrage opportunity for water users.

We believe the cost sharing rule for incremental service charges may therefore lead to outcomes that are inconsistent with economic efficiency. For example, it would be open to a water user to contract with SDP on day 2 of a plant operation period and terminate the agreement on the final day of the drought. Such a user may avoid paying a share of the transition to restart charge, but would also pocket the difference between the price of water from SDP and the price of water from Sydney Water on all water it used during the period. With a minimum run time of 14 months under the operating rules, this could amount to a material windfall gain for a large water user.

Sydney Water can't identify any broader policy objectives that might be achieved by permitting such an outcome to occur. As such, we do not support IPART's draft decision to allocate incremental service charges on an impactor pays basis during drought. Sydney Water reiterates our view that these charges should be shared on a beneficiary pays basis, whether inside or outside drought.

¹⁰ IPART Draft Report – Sydney Desalination Plant – Review of prices from 1 July 2017 to June 2022, Appendix E.

8 Treatment of membrane replacement costs

This chapter provides our detailed comments on draft decisions 54–57.

Key messages

- It is possible some membranes may be replaced in 2017 or 2018 as part of stormrelated reinstatement works.
- Sydney Water seeks assurance that membranes replaced as part of reinstatement works will be excluded from the starting membrane RAB.
- Sydney Water would also like to understand how IPART is likely to view membrane replacement costs if the desalination plant were to operate for more than 4 years at some time in the future.

8.1 Capitalisation of membrane costs and asset life

In the 2012-2017 price determination for SDP, the starting RAB for the desalination plant included the cost of the initial set of reverse osmosis membranes. This cost is recovered over the assumed asset life of the plant (30 years), including a rate of return, with on-going replacements funded as operating expenditure in the year of replacement.

The draft determination proposes a change to this arrangement, with replacement membranes to be treated as capital expenditure rather than operating expenditure. IPART proposes to create a separate membrane regulatory asset base (RAB), with costs recovered over an assumed eight year asset life.

The rationale for capitalising membrane replacement costs is outlined by Atkins-Cardno in their efficiency review report¹¹. The primary justification is provided by reference to Australian Accounting Standards Board (AASB) guidance on the treatment of expenditure on plant, property and equipment¹². Sydney Water agrees that reverse osmosis membranes appear to be consistent with the definition of an asset under AASB 116, particularly as they provide a benefit for more than 12 months.

However, Sydney Water notes that while membranes may have a manufacturer's warranty of up to eight years, the economic life may be much shorter. For example, membrane fouling over time will result in higher energy use to produce the same quantity of water. A point will eventually be reached where energy costs rise so much that it becomes cheaper to replace the membrane. This cross-over point is likely to be reached well before the period covered by the manufacturer's warranty.

¹¹ Atkins/Cardno (2017) Sydney Desalination Plant Expenditure Review, section 5.3.6.

¹² Australian Accounting Standard AASB 116 Property, Plant and Equipment.

8.2 Replacement of storm-damaged membranes

The starting membrane RAB has been estimated based on replacing all membranes on first restart. Sydney Water generally agrees that, given the length of time the membranes have been in preservation, a full replacement on restart is likely to represent a lower cost solution than alternative strategies, such as a partial plant test. We note that while there may be other benefits from conducting a partial plant test, such as testing the reliability of other assets or systems at the plant, these have been reviewed and discounted by IPART's expenditure review consultants.

It is unclear whether any membranes will be replaced as part of storm-related reinstatement works. Sydney Water seeks assurance that membranes replaced as part of reinstatement works would be excluded from the starting membrane RAB.

8.3 On-going replacements

After full membrane replacement on restart, the draft determination does not anticipate any further replacements in the 2017-2022 price period. However, if the plant restarted and then continued to operate in the following (2022-2027) price period, it is likely to be prudent and efficient to replace a portion of the membranes for energy efficiency reasons. Sydney Water would like to understand how any such replacements would change the membrane RAB. For example, how would the membrane RAB be adjusted in the event that some membranes are replaced after less than eight years?

Sydney Water believes the prudent and efficient costs of membrane replacement should be reflected in the membrane RAB and in the resulting daily membrane service charge, as per IPART's current practice for other capital expenditure items.

9 Prices and impacts

This chapter provides our detailed comments on draft decision 58.

Key messages

- Sydney Water supports IPART's proposed draft prices for the 2017 determination period.
- Figures quoted for revenue allowances in the 2016-2020 price determination for Sydney Water may not refer to the correct amounts.

Section 11.2 of the draft determination provides IPART's analysis of the impact of their draft decisions on Sydney Water's retail customers. Section 11.4 then assess the impact of the price changes on the general rate of inflation. Footnote 272 on page 133 contains a reference to figures from the 2016 Sydney Water determination. However, Sydney Water notes that figures quoted in the draft SDP determination have slight inconsistencies with the corresponding values from the 2016 Sydney Water determination.

Appendix 1 – Confidential