Sydney WATER

Sydney Water's response to IPART's Issues Paper

IPART's review of prices for Sydney Desalination Plant Pty Ltd from 1 July 2017

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Executive summary

Sydney Water Corporation (Sydney Water) welcomes the opportunity to respond to the Independent Pricing and Regulatory Tribunal's (IPART's) Issues Paper titled *Review of prices for Sydney Desalination Plant Pty Ltd (SDP)* (the Issues Paper) which was released 29 August 2016.

In participating in the review, we support IPART's objectives of increasing SDP's operating flexibility and further encouraging third party entry, where there are benefits for Sydney Water's customers, and so long as the costs of these proposals are allocated equitably. A key principle of the review should be that Sydney Water customers should not bear additional risks, or pay additional costs for these reforms, if they do not derive a consequential benefit.

Sydney Water position on IPART's Issues Paper

A core theme of IPART's Issues Paper is how to improve the efficient use of SDP. Sydney Water:

- does not support any changes to the Water Supply Agreement
- thinks operating flexibility is a worthy idea, but not practical for supply of water to Sydney Water
- does not support removal of the nil charge for the supply of drinking water to Sydney Water outside the operating rules
- supports the sale of drinking water to third parties at fair and equitable prices, so long as Sydney Water does not have to subsidise the sale to third parties
- does not support the recovery of storm costs from customers.

Our responses to IPART's specific proposals are detailed below.

Sydney Water is SDP's customer

Sydney Water's relationship with the desalination plant has changed. In the early 2000s during the height of the drought, dam levels supplying the greater Sydney region dropped to 33.9 per cent, and the NSW Government formally directed Sydney Water to build the plant and pipeline. SDP was formed as a wholly owned subsidiary of Sydney Water. It was licensed to operate under the *Water Industry Competition Act 2006.* Later, in 2012, it was refinanced to the private sector in a long-term lease arrangement.

SDP's original purpose and governance arrangements

The background of the plant is important. It is vital to remember that the original and primary purpose of the plant is to provide an 'insurance measure' in case of future drought. Its core value is its ability to supply non-rainfall dependent water that can supplement water supply from the dams. To ensure it does this in an optimal manner at least cost to the community, a complex and intricate suite of governance arrangements were created around the plant's operations.

This includes its licences to operate which reflect the operating rules that were developed under the Metropolitan Water Plan. SDP's Network Operator licence requires SDP to maximise

production, and supply to Sydney Water, when total dam storage levels fall below 70 per cent and to continue to do so until the total dam storage levels reach 80 per cent.

There is also a portfolio of project documentation including a Water Supply Agreement, which sets out the terms and conditions for SDP to supply drinking water to Sydney Water. Under the Water Supply Agreement, Sydney Water must accept water provided by SDP and cannot request water except in very limited circumstances. Currently, SDP is disincentivised from supplying water to Sydney Water outside the operating rules because of a nil charge that applies to the supply of water in these circumstances. This is to prevent customers from paying for unnecessary water.

A third component of the governance framework is the Terms of Reference set by the Minister for Finance and Services in 2012 as part of referring SDP to IPART for regulation of its prices. Formal price regulation provides the incentive for SDP to manage its costs efficiently with independent scrutiny applied by IPART and its advisors. The Terms of Reference contain the financial indifference principle which governs many aspects of the overall framework in which the plant operates. The Terms of Reference provide that SDP's pricing arrangements should encourage SDP to be financially indifferent as to whether the plant supplies water. This provides value to the community by ensuring that the plant will be disincentivised from departing from its primary purpose of providing drought relief in accordance with the rules developed through the Metropolitan Water Plan.

IPART's determination also sets a nil charge for any water that SDP supplies to Sydney Water outside of the 70/80 operating rules. In other words, SDP may produce water when dams are high, but Sydney Water is not required to pay for it. It is critical that IPART does not remove this nil charge because it disincentivises SDP selling unnecessary water to Sydney Water, which Sydney Water must accept, outside its drought response role. Removal of the nil charge could also diminish the incentive for SDP to seek other customers, and could have significant social impacts for our customers by increasing their bills if water was required to be accepted by Sydney Water at a higher price than may be available from other water sources. The nil charge applies to water supplied to Sydney Water outside the 70/80 operating rules. It does not prevent SDP from producing water outside the 70/80 operating rules and selling it to a third party.

This governance framework was created with the express purpose of ensuring the community gets the best value in return for their investment in the plant, by ensuring the plant serves its primary purpose of providing drought insurance to Sydney.

Sydney Water appreciates IPART wishing to explore the potential for enhancements to SDP's operating framework, to enable it to better respond to drought, while at the same time encouraging its efficient use when dam levels are high. Nonetheless, it is critical that any potential new enhancements do not undermine the core purpose of the plant to provide drought security. Nor should Sydney Water's customers be adversely affected by any enhancements to SDP's operating flexibility. We welcome IPART's commitment to ensure that any changes to the regulatory settings align with SDP's water security role, as outlined in the NSW Government's Metropolitan Water Plan. Sydney Water urges caution to ensure that no changes are adopted that may inadvertently interfere with the purpose and value of the plant to protect the community should drought conditions arise again, and perversely erode the value the community derives from the plant.

Safeguarding Sydney Water's customers

Sydney Water's focus on ensuring the community obtains optimal value from the plant arises from our corporate strategy, which is to be the lifestream of Sydney for generations to come, and place our customers at the heart of all we do. As a customer-centric organisation, we seek to ensure that any reforms which may be implemented should both safeguard the original intent and purpose of the plant, and provide value for customers.

Where once Sydney Water owned the shares in SDP, we are now its major customer and our customer base benefits from the presence of the plant. The fixed costs of SDP are passed through to Sydney Water customer bills via our fixed water service charge, representing about $100 (eight per cent) of a typical annual residential bill, and an increase in our water usage charge of $0.12 per kilolitre when the plant is switched on.

Our strategic objective for this review is to seek good value, equitable outcomes for our customers. The ideal outcome would be a determination that appropriately allocates the efficient costs of SDP across its customer base, in a manner that aligns with the benefits provided by the plant. To assist in achieving this outcome we present our views in this submission through the lens of our customers, and appropriate financial and service outcomes for them.

Sydney Water's response to specific proposals

IPART has proposed a range of measures with the stated aim of enhancing the operational flexibility, and encouraging the efficient use of the plant and pipeline.

Sydney Water supports IPART's proposal to reallocate the fixed operating costs in the base 'water security' charge to an incremental fixed charge for each mode of plant operation. However, we believe IPART's assessment of the incremental fixed charge may be understated, as it only includes some fixed operating costs, but not all operating costs. It is essential that this proposed reallocation be examined for the pricing arrangements to be fair to Sydney Water's customers. If the proposed allocation is strictly retained, IPART may set charges that are not fully aligned with the full operating costs of each mode. This will not only defeat the purpose of greater transparency, it will also place an unfair burden on Sydney Water's customers, by requiring them to potentially bear additional costs. These issues will be exacerbated if the impactor pays arrangement is introduced, as the pricing inaccuracies could create perverse outcomes such as setting a lower incremental price for desalinated water than the comparable treated water provided by Sydney Water, even though dam water, our main source of water, is in fact cheaper.

Increased commercial use of the plant: user pays or impactor pays

We also support IPART's objective of further encouraging the potential for increased commercial use of the plant outside its drought security mode (that is, outside the 70/80 rule). Sydney Water has always supported any measures that will encourage efficient entry to the market and competition in the long-term interests of consumers, i.e. that increase industry efficiency or lead to lower prices or improved service offerings. These outcomes, however, should not be generated through subsidies by Sydney Water customers. We also reiterate the primal importance of safeguarding the integrity of the original governance arrangements supporting the plant – any measures to increase competition must not interfere with its core purpose of providing drought insurance to the community.

Customers other than Sydney Water already have the ability to purchase water from the plant at any time. In fact SDP has a strong incentive to secure third party customers to avoid early termination on the Water Supply Agreement with Sydney Water. SDP has operating flexibility to provide water outside the operating rules at any time to third parties. IPART is proposing to further encourage the efficient use of the plant by making it more attractive for such third party customers to request water from SDP. We recognise the potential benefits in this for our customers. For example, if a third party customer purchases water from SDP when dams are above 80 per cent and the plant would otherwise be shut down, this displaces demand from the dams, and delays dam levels falling to the trigger points where Sydney Water begins to purchase water from SDP. This has the benefit of delaying the need for Sydney Water to incur, and pass on to our customers, the additional costs associated with purchasing water from SDP. By operating the plant more often, it may also avoid some of the extra testing costs that might occur in extended water security shutdowns.

IPART's proposal to further encourage third party entry is to move the base (fixed) service charge from a 'user pays' to an 'impactor pays' mechanism. This means the share of SDP fixed costs paid by the third party customer moves from being based on their share of SDP production, to their share of total system demand (dams plus SDP production).

SDP in fact proposed this arrangement in 2011, when still a wholly owned subsidiary of Sydney Water. We believe an impactor pays approach is fair in that the base (fixed) service charge represents the 'drought insurance premium' that all customers in the greater Sydney area currently pay to ensure the plant is available to supply drinking water when dam storage levels fall below 70 per cent. Sydney Water's customer base has a far greater reliance on this premium than a third party customer, as we use the majority of the water supply (SDP supplies a maximum of 15 per cent of the total system supply.) The impactor pays principle allocates costs according to the proportions in which the parties created the 'drought insurance premium', or the need to incur the cost.

The current user pays mechanism allocates fixed costs, even when SDP is in shutdown, based on each customer's (historical) share of the water SDP has supplied. This is not linked to the customer's impact on the total water system demand and hence the need to incur the 'drought insurance premium'. For example, under user pays if a third party customer purchased 100 per cent of the plant's production when dams were high, that customer would currently be forced to pay 100 per cent of the plant's fixed costs, even in drought. This is not an equitable arrangement. It does not align with the benefits of the plant, which are shared by the whole community (largely our customer base), plus it limits the attractiveness for any third parties to use the plant when dams are high.

At present IPART's proposal has no actual financial impact on Sydney Water. As SDP's only current customer, we pay all of SDP's costs. The potential merit in the impactor pays principle is that if it attracts third party customers to request water from SDP when dams are high, our costs will be reduced compared to the current framework.

We note that SDP calls for an industry review before any decisions are made about the user pays or impactor pays proposal. Various other participants in the water pricing debate have made similar calls in recent times. Sydney Water believes this is a decision for government, but can see merit in taking a holistic approach to confirming and clearly articulating the government's objectives

for the urban water industry. In the face of competing demands and priorities, there is some risk that altering specific aspects of the industry regulatory framework may have broad-reaching effects. Ideally, all participants should be clear that incremental changes are consistent with government's objectives and the overall policy settings for the industry. As stated previously, IPART should be mindful of these risks in considering any potential changes.

IPART should also ensure that this proposal aligns with the *Water Industry Competition Amendment (Review) Act 2014*, which provided that new drinking water licencees could be required to make a financial contribution to promote the equitable sharing of the costs of water industry infrastructure such as SDP, that significantly contribute to water security.

Inoperable mode

We do not support IPART's proposal for an 'inoperable mode'. If SDP bears no financial consequence even when not offering its availability value, there is a reduced incentive to restore the plant to functionality as quickly as possible. This is not efficient or good value for the community. We also question whether it is technically possible for IPART to determine a charge of this type, as a charge must relate to a service provided by SDP, and in inoperable mode the plant is not in fact providing any service.

Sydney Water does not think it appropriate that its customers should pay SDP's fixed charges in these circumstances. Sydney Water believes that when the plant is inoperable (and therefore incapable of providing the services set out above) a nil charge should apply. SDP should procure, and be entitled to recover the cost of, appropriate insurance premiums to mitigate this risk.

See our response to question 22 for more details.

Transition charges

Third party customer requests for SDP water when dams are high may also assist in drought readiness. Currently the plant takes some 8 months to restart from a water security shutdown, and this incurs a 'transition charge'. If the plant were already operating as dam levels approached the trigger point to begin operation, this lead time could be reduced and the transition charge passed through to our customers could be avoided.

However, IPART needs to carefully consider how their proposal for increased commercial use interacts with transition charges. If the pricing proposal does not appropriately reflect the underlying cost drivers, it could potentially create some risk of perverse outcomes that are not equitable to Sydney Water's customers. Whether a user pays or impactor pays model is adopted, Sydney Water customers bear some cost for transition charges. This is acceptable where the transition is related to the plant turning on or off in relation to its drought operating modes.

However, if the plant needs to turn on or off only because a third party customer makes a commercial request for the plant to supply water, Sydney Water and its customers should not bear any cost for this. Our customers are already bearing their fair share through the base fixed charges. In return, they should benefit from a saved transition charge if the plant is already running when dams drop below 70 per cent, because a third party customer has asked it to run.

Minimum running times, soft restart, and soft shutdown

IPART has proposed the introduction of a minimum running time when the plant is called into operation, along with soft shutdowns and soft restarts. That is, a gradual turning on and off of the plant. There could be some operational advantage for Sydney Water in these proposals (within certain physical constraints), and some disadvantages as well.

We believe that these matters should be decided as part of the operating rules under the Metropolitan Water Plan. The Metropolitan Water Plan carries out appropriate cost benefit analysis on whether these proposals are efficient or cost-effective. IPART's pricing determination should reflect the decisions made through the operating rules.

Sydney Desalination Plant Pty Ltd (SDP) submission

This review provides the first opportunity for the private sector lessee of SDP to present its costs, revenues and structural proposals. It is challenging to assess the full impact of SDP's regulatory proposal on our customers given that various sections of SDP's submission are redacted as commercial in confidence. Notwithstanding this, Sydney Water has reviewed the disclosed parts of SDP's submission and considered the potential outcomes.

Bill impacts, storm damages and cost pass through mechanism

SDP forecasts that reduced costs (largely due to a reduction in real interest rates) will lead to a saving of around $23 per year on Sydney Water customer bills in the 2017-22 period. Any reduction is a positive outcome for our customers, although we estimate the bill reduction to in fact be closer to $14-18 once impacts of the proposed increase to opex, shorter pipeline asset life and energy adjustment mechanism are included. However, it appears that other elements of SDP's pricing proposal may involve large increases in cost that may eliminate the forecast bill reductions. This appears to be the case for damages arising from the tornado that swept through Kurnell in December 2015. It is not possible to understand the quantum of any uninsured costs that SDP may be seeking to recover through its future prices, and therefore the potential impact on our customers' bills, as multiple sections of their proposal have been redacted for commercial in confidence reasons. In any case, and as outlined below, we do not support the recovery of uninsured storm damage costs from our customers.

SDP proposes the establishment of a mechanism to pass through costs that are unknown at the time of IPART's pricing determination, to Sydney Water customers' future bills. Sydney Water sees merit in the use of cost pass-through mechanisms in certain circumstances. For example, it enables the recovery of unknown costs if they occur in future, without requiring customers to pay unnecessarily high charges before the costs are known. The replacement of reverse osmosis membranes following an extended water security shutdown might be an example of an appropriate pass-through cost. In our view, the efficient costs for the new membranes should be capitalised and recovered over their economic life. A pass-through of the increase in return of capital for new membranes once incurred is more appropriate than including an upfront fixed allowance for membrane replacement in the restart charge as proposed by SDP.

Though it is not stated, we expect that SDP may propose to recover any shortfalls in insurance for storm damage repair costs via this mechanism. Sydney Water does not support the pass-through of any additional costs resulting from storm damage. In its 2016 review of Sydney Water prices,

IPART rejected the contention that a business should either be financially compensated for holding business specific risk, or that these risks should be necessarily passed on to customers. We urge IPART to take a consistent stance with the private lessee of the desalination plant. SDP is a single asset company, and the availability of their asset is a business specific risk. While we understand that SDP could not prevent the storm from occurring, we urge IPART to carefully examine SDP's insurance arrangements. If SDP could have maintained appropriate insurance for their asset in case of such an event and did not, Sydney Water customers should not be asked to foot the bill.

Similarly, we do not support SDP being able to recover the costs of any routine testing if this duplicates the testing that SDP will need to undertake to restore the plant's functionality after the storm. To the extent that SDP will need to perform such testing to recover from the storm event, it should not be necessary to repeat such testing at the cost of Sydney Water's customers. This would represent inefficient duplication.

Regarding the efficiency and energy adjustment mechanisms, we dispute SDP's view and consultant's report claiming that the risks and costs of actively managing resales of their excess electricity outweigh the potential benefits. We estimate that energy adjustment activity will pass an increase of about $3.50 per year through to our customers' bills from 2017-18 onwards. We believe SDP should be incentivised to actively manage this so as to optimise the impact on customer bills, rather than just being afforded a straight pass through. We believe this can be done within the Terms of Reference for SDP, by calculating gains and losses on electricity resales against the half hourly spot price, but only providing for the pass-through of the net gains or losses outside a core band. This does not inhibit IPART defining the core band to provide a stronger incentivised arrangement for SDP to minimise the costs passed borne by customers. As outlined later in our response, such an incentive regime could make a material difference to our customers' bills and we urge IPART to consider changes to the adjustment mechanism that will encourage a more active role by SDP.

In considering these matters we believe IPART's choice of efficiency reviewer will be critical. Significant parts of IPART's review relate to commercial in confidence material and the community is forced to rely on IPART's findings without full transparency of information. This places enormous responsibility in the hands of the organisation chosen to assess the efficiency of SDP's proposed costs. Given the specialised nature of the operation of desalination plants, we urge IPART to ensure a reviewer is selected with strong experience and understanding regarding desalination plant and processes.

1 Introduction

This document is structured so that Chapter 2 provides Sydney Water's high level position on IPART's stakeholder questions, Chapter 3 provides background on the desalination plant which provides a context for our response, and Chapters 4–8 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 issues for stakeholder comment – provides Sydney Water's high level position on all issues for stakeholders
- Chapter 3: Overview of Sydney Desalination Plant Pty Ltd – provides background on the desalination plant as context for our response
- Chapter 4: Refining the price structure – provides Sydney Water's detailed comments on questions 1–5
- Chapter 5: Refining the cost sharing principles – provides Sydney Water's detailed comments on questions 6–10
- Chapter 6: Refining the incentive mechanisms – provides Sydney Water's detailed comments on questions 11–17
- Chapter 7: Setting SDP's revenue requirement – provides Sydney Water's detailed comments on questions 18–17
- Chapter 8: Energy and efficiency adjustment mechanism – provides Sydney Water's detailed comments on questions 28–32

2 Response to issues for stakeholder comment

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

Price structure for fixed charges

1. **Under the Terms of Reference, the prices for making the plant available should be a periodic payment. These prices should reflect fixed costs, including the fixed component of operating costs, a return of assets and a return on assets.**

   Should we refine the current price structures for making the plant available by splitting the fixed charges into the following two components:
   - **a base 'water security' charge reflecting the minimum costs of maintaining the plant (payable in all shutdown and operation modes), and**
   - **mode-dependent incremental service charges reflecting the different fixed operating costs in each shutdown and operation mode?**

   Sydney Water supports the proposal. Refer to Chapter 4 and 5 for detailed comments.

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2. **Are the current four shutdown (and restart) modes still appropriate?**

   Sydney Water believes the modes are still appropriate. Refer to Chapter 4 for our detailed comments.

Price structure for variable charges

3. **Under the Terms of Reference, the prices for the supply of drinking water should reflect all efficient costs that vary with output.**
   - **Does the unit cost (per ML of output) vary depending on the amount of water produced? If so, should we set usage charges to accommodate varying levels of output?**

   Sydney Water has concerns with the proposal and the impact on the financial indifference principle. Refer to Chapter 4 for our detailed comments.

Price structure for transition charges

4. **SDP currently has one-off transition charges to reflect the fixed costs when SDP is moving between modes.**
   - **Are the current transition charges still appropriate?**
   - **Should the transition charges be adjusted if SDP operates more flexibly outside its drought response role (i.e., when dam levels are high)? If so, how?**

   Sydney Water believes the current transition charges need refinement and we have concerns with SDP's pricing proposal. Refer to Chapter 4 and 5 for our detailed comments.

Price structure for pipeline charges

5. **SDP has a separate charge for its pipeline asset (i.e., distinct from the plant), which applies in all modes of operation.**
   - **Should we continue setting a separate charge for the pipeline?**
   - **If so, should the pipeline charge vary by mode of operation?**
   - **How should pipeline charges be shared in the event SDP has multiple customers?**

Sydney Water in principle supports the proposal. Refer to Chapter 4 for our detailed comments.

Refining the cost sharing principles

6. **How should SDP's base 'water security' costs be shared between customers?**
   - **Should SDP's base 'water security' costs continue to be shared between SDP's customers based on the user pays principle? That is, should this base charge be shared between Sydney Water and any other SDP customer based on their respective share of total drinking water supplied by SDP?**

   Or

   - **Should SDP's base 'water security' costs be shared between bulk water customers based on the impactor pays principle? That is, should this base charge be shared between Sydney Water and any other bulk water customers based on their respective share of total water system demand (being bulk water sourced from both dams supplying greater Sydney and the desalination plant)?**

   Sydney Water in principle supports the proposed impactor pays cost sharing principle for base 'water security' costs. Refer to Chapter 5 for our detailed comments.

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7. **If the impactor pays principle applies to SDP's base 'water security' costs, are there any circumstances where bulk water customers should not contribute to these costs?**

   There are no circumstances where bulk water customers should not contribute to SDP's base 'water security' costs. Refer to Chapter 5 for our detailed comments.

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8. **How should incremental fixed costs and usage charges be shared between SDP's customers?**
   - **Should the incremental fixed costs be shared between SDP's customers based on the user pays principle? That is, should the incremental charges be shared between Sydney Water and any other customers based on their respective share of water purchased from SDP?**

   Sydney Water in principle supports the proposed user pays cost sharing principle for incremental fixed costs and usage charges. Refer to Chapter 5 for our detailed comments.

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9. **Is there a case for extending the impactor pays principle to all SDP's costs during drought – i.e., incremental fixed costs and/or usage costs?**

   Sydney Water does not support the proposal to extend the impactor pays principle to all SDP's costs during a drought. Refer to Chapter 5 for our detailed comments.

Pricing for greater operating flexibility

10. **How could prices (both fixed and usage charges) be set to allow greater operating flexibility to enhance efficiency?**

    Sydney Water expresses concerns with the impact on the financial indifference principle. Refer to Chapters 4 and 5 for our detailed comments.

Refining the incentive mechanisms

11. **Is there a need to refine our regulatory settings to better align SDP's incentives to fulfil its water security role? In particular, should SDP be able to:**

- **Operate at less than full capacity without penalty when ramping up production to fulfil its water security role ('soft' restart mode)?**
- **Sell drinking water to Sydney Water when transitioning to a shutdown mode after a period of operation fulfilling its water security role ('soft' shutdown mode)?**
- **Operate for a minimum run time when it is called into operation to fulfil its water security role?**

Sydney Water does not support changes to the Water Supply Agreement or the removal of the nil price for desalinated water outside the operating rules. Refer to Chapter 6 for our detailed comments.

12. Is there a need to refine our regulatory settings to accommodate greater operating flexibility outside of SDP's water security role (i.e., when dam levels are high)?

- **In particular, should SDP be able to sell drinking water to Sydney Water upon request (i.e., should we remove the nil price for any water supplied to Sydney Water when dam levels are high)?**

Sydney Water does not support changes to the Water Supply Agreement or the removal of the nil price for desalinated water outside the operating rules. Refer to Chapter 6 for our detailed comments.

13. Could greater operating flexibility outside of SDP's water security role provide system-wide benefits by lowering Sydney Water's costs or improving its service standards, ultimately benefiting Sydney Water's retail customers?

Sydney Water does not support changes to the Water Supply Agreement or the removal of the nil price for desalinated water outside the operating rules. Refer to Chapter 6 for our detailed comments.

14. Are there any impediments to SDP and Sydney Water operating more flexibly and efficiently outside of SDP's water security role?

The financial indifference principle is a key impediment to SDP operating more flexibly outside its water security role. Refer to Chapters 4 and 6 for our detailed comments.

15. Are there any other circumstances when SDP should have operating flexibility?

SDP already has operating flexibility to provide water outside the 70/80 operating rule at any time to a third party. Refer to Chapter 6 for our detailed comments.

16. Is there a case to allow periodic partial testing of the plant when in extended shutdown to improve SDP's availability and reliability as a drought response measure? If so, what are the appropriate protocols for operating the plant in this capacity, such as the technically prudent:

- **frequency and duration of the testing period, and**
- **volumes of drinking water produced during a testing period?**

Sydney Water accepts in principle that testing costs should be borne by all water customers. However, we do not agree that they should be provided for in the 2017 pricing determination. Refer to Chapter 6 for our detailed comments.

17. An abatement mechanism applies to SDP's fixed charges if it produces volumes of water less than the plant's full production capacity when it is fulfilling its water security role.

- **Are there current aspects of the abatement mechanism that need modifying?**
- **Is this financial incentive still relevant or are there other performance mechanisms that could better ensure SDP maximises supply when required?**

Sydney Water proposes a refinement to the abatement mechanism. Refer to Chapter 6 for our detailed comments.

Length of determination period

18. Should the length of SDP's determination period continue to be set for five years?

Sydney Water proposes a shorter determination period. Refer to Chapter 7 for our detailed comments.

Notional revenue requirement

19. The revenue requirement represents SDP's total efficient costs of providing its monopoly services in each year of the determination period. SDP's costs, and thus its prices, vary depending on what operating mode it is in.

- **Should we continue using a 'building block' method to calculate SDP's revenue requirement?**
- **Should we continue to set mode-dependent notional revenue requirements?**
- **Should we continue to set a separate notional revenue requirement for SDP's pipeline?**

Determining what the efficient costs are is a matter for IPART's expenditure consultant. Refer to Chapter 7 for our detailed comments.

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20. SDP's pricing proposal is due on 24 October 2016 and will be made available at our website for stakeholder comment. Does SDP's proposed revenue requirement in each mode of operation represent efficient costs, taking into account its proposed:

- **operating and capital expenditure**
- **return on assets**
- **regulatory asset base**
- **regulatory depreciation and asset lives**
- **tax allowance, and**
- **return on working capital?**

It is challenging to assess efficiency or the full impact on our customers given that various sections of the submission are redacted. Refer to Chapter 7 for our detailed comments.

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21. What scope is there for SDP to achieve efficiency gains over the 2017 determination period?

This is a matter for IPART's expenditure consultant.

Recovering efficient costs when SDP is inoperable

22. The desalination plant sustained significant damage from a storm event on 16 December 2015. Since that time, the plant has been unable to operate (not capable of providing non-rainfall dependent drinking water).

- **What are the implications of this storm event on SDP's efficient costs?**
- **Should we establish a new revenue requirement (and pricing mode) to account for when the plant is inoperable?**
- **Who should bear the SDP's costs if the plant is inoperable?**

Sydney Water should not pay for SDP's additional costs arising from the storm event. Sydney Water supports the payment of insurance premiums, including business interruption insurance, as a revenue requirement. Refer to Chapter 7 for our detailed comments.

Energy costs

23. What are SDP's efficient energy costs for the 2017 determination period?

SDP's efficient energy costs are their contract prices. Refer to Chapter 7 for our detailed comments.

24. Should we continue to pass through into prices SDP's fixed and variable network charges (as determined annually by the Australian Energy Regulator)?

Sydney Water supports IPART's proposal. Refer to Chapter 7 for our detailed comments.

Cost pass-through

25. We consider that cost pass-through mechanisms should only be applied in exceptional circumstances and have outlined criteria to determine where cost pass-through mechanisms should apply.

- **Is there a case to manage any other of SDP's proposed costs through a cost pass-through mechanism?**

Sydney Water agrees that cost pass-through mechanisms should only be applied in exceptional circumstances. Refer to Chapter 7 for our detailed comments.

Asset lives

26. Is there a case to reconsider the asset classes established in the 2012 review?

Sydney Water does not support a review of the asset classes established in the 2012 review. Refer to Chapter 7 for our detailed comments.

27. Is there a case to review SDP's asset lives as a result of the damage to the plant caused by the recent storm event?

Sydney Water does not support a review of the asset lives as a result of the storm damage. Refer to Chapter 7 for our detailed comments.

Energy Adjustment Mechanism

28. Is our proposed implementation of the energy adjustment mechanism for the current price review appropriate?

Sydney Water does not support IPART's proposal for calculating the shortfall adjustment for electricity. Refer to Chapter 8 for our detailed comments.

29. What aspects of the energy adjustment mechanism should be updated or amended for implementation at future price reviews?

The energy adjustment mechanism should provide an incentive for SDP to actively manage the resales of electricity. Refer to Chapter 8 for our detailed comments.

Efficiency Adjustment Mechanism

30. Is our proposed implementation of the efficiency adjustment mechanism for the current price review appropriate?

Sydney Water supports IPART's proposed implementation. Refer to Chapter 8 for our detailed comments.

31. What aspects of the efficiency adjustment mechanism should be updated or amended for implementation at future price reviews?

Sydney Water suggests possible refinements to SDP's efficiency adjustment mechanism. Refer to Chapter 8 for our detailed comments.

32. Should we extend the efficiency carryover mechanism that we introduced for Sydney Water, Hunter Water and WaterNSW to SDP?

Sydney Water agrees that efficiency losses should never be passed through to customers. Refer to Chapter 8 for our detailed comments.

3 Overview of Sydney Desalination Plant Pty Ltd

Key messages

- The NSW Government formally directed Sydney Water to build the desalination plant in 2007 as a non-rainfall dependent water source.
- The operating rule for the plant - '70/80 rule' i.e. supply of water once dam storage levels fall below 70 per cent until dam storage levels reach 80 per cent - was chosen as the operating framework as it maximised consumer net benefits.
- In 2012 the NSW government entered into a long-term lease on SDP with a private consortium, including both domestic and international investors.
- SDP holds a Network Operator licence and a Retailer Supplier licence under the Water Industry Competition Act 2006 (WICA).
- SDP's prices are based on the review of:
    - long-term contracts it holds with Veolia for the operation and maintenance of the plant, drinking water pumping station and the water supply pipeline
    - contracts between SDP and its suppliers of electricity and renewable energy certificates.
- The Water Supply Agreement specifies arrangements for the supply of drinking water from SDP to Sydney Water, and does not inhibit SDP supplying water to customers other than Sydney Water.

Understanding the background of the desalination plant is important to set a context to our response to IPART's issues paper. It is vitally important to recognise that the original and primary purpose of the plant is to provide an 'insurance measure' in case of future drought. Its core value is its ability to supply non-rainfall dependent water that can supplement the supply from the dams. To ensure it does this in an optimal manner at least cost to the community, a complex and intricate suite of governance arrangements were created around the plant's operations.

Sydney's Desalination Plant has been part of the NSW Government's Metropolitan Water Plan since 2004. Key decisions taken during that time include:

- In 2004, Sydney Water was asked to investigate the feasibility of using desalination to assist with water supply management in Sydney.
- Our Desalination Planning Study later concluded that desalination using seawater reverse osmosis was a feasible option, and that investment could be staged over time by adopting a modular approach to infrastructure development.

- In early 2006, Sydney Water was asked to develop the desalination project to a sufficient stage so that, in the event of severe drought, it could be built within around 26 months from the start of major construction.
- In February 2007, storages had dropped to 33.9 per cent of capacity – the lowest level since the commissioning of Warragamba Dam in 1960. The NSW Government therefore approved Sydney Water to proceed with full procurement of the project, including issuing tenders for construction.
- In 2010, an analysis of the costs and benefits of three potential operating rules concluded that net benefits would be maximised if the desalination plant only produced drinking water when dam storages dropped below 70 per cent, and that water is not required for water security reasons when dams return to 80 per cent (the operating rules).
- In 2011, the NSW Government announced plans to refinance the desalination plant, a process that was completed in 2012 with the signing of a long-term lease with the private sector.

The desalination plant remains one of several measures to secure Sydney's water supply against the effects of climate change, population growth and drought, within the context of the Metropolitan Water Plan and associated operating rules.

3.1 Characteristics of the desalination plant

Operational flexibility was a key requirement of the original procurement process, both in the short and long term, and this is reflected in the design of the desalination plant as well as the terms and conditions of the associated contracts.

The tender for the design, build, operate and maintain (DBOM) contracts advised bidders that the desalination plant would be required to perform under a variety of potential operating scenarios, which could include periods in shutdown, continuous low flow production, variable operation, and production at maximum capacity. Three broad types of shutdown mode were identified (short, medium and long), but bidders had flexibility to nominate an appropriate length for each of these modes, as well as the ability to propose additional shutdown modes. Bidders used their technical expertise to develop a process design, and associated operating and maintenance protocols, which could meet these performance requirements at lowest lifecycle cost. This included specifying the number, duration and operating protocols of different modes, as well as the change in costs that would occur under, and as a result of, each type of shutdown. As such, the costs of Sydney's Desalination Plant reflect the outcomes of a carefully considered design solution to a complex set of performance requirements.

A key outcome of this competitive tender process was a design proposal with two distinct seawater reverse osmosis desalination modules, each capable of operating independently of the other and able to be shut down for long periods (up to five years) for a firm contract price. Each module would have a notional capacity of 133 ML a day, or 125 ML a day on an annual average basis[1].

[1] Allowing for planned maintenance, the plant is required to be available for 94 per cent of the year. As a result, the expected average annual daily output of each module plant is 125 ML a day (i.e. 133 x 0.94).

The capability to produce more than 125 ML a day of drinking water from a module on any given day provides a means of managing the impact of unplanned production problems, and output sometimes exceeded these volumes during the initial two-year proving period.

Designing the desalination plant as two distinct modules has important implications for costs, including:

- One module can be shut down while the other remains operational[2].
- One module can be in a different shutdown mode to the other module.
- After one module has been made operational, the incremental fixed costs to start the second module are lower.
- Water production from one module can be a different volume than the other module.
- Changes in energy costs are not linear across the whole range of drinking water production possibilities, because maximum efficiency is achieved when a module is operating at full capacity. From an energy perspective, the optimal level of output is therefore either 125 ML a day or 250 ML a day, and per unit costs will be higher at all other levels of output[3].

These characteristics provide a great deal of flexibility to manage total costs by varying the desired level of drinking water production. They also mean there can be step changes in certain costs as output varies. Considered as a whole, however, the average cost of drinking water from the desalination plant generally falls as production increases, and reaches a minimum when both modules are active and operating at full capacity.

In the very long term, the layout of the plant ensured there is sufficient space to allow the construction of additional desalination modules, should they be required in the future, that would expand the reverse osmosis process to an ultimate capacity of 500 ML a day. With the exception of the drinking water pumping station, which has sufficient pumping capacity for 250 ML a day, all the other associated infrastructure has been sized for the ultimate capacity of 500 ML a day.

3.2 SDP's ownership and operating environment

3.2.1 Ownership and refinancing

In 2011, the NSW Government announced plans to refinance the desalination plant and pipeline by entering into a long-term lease arrangement with the private sector.

On 1 June 2012, the government entered into a $2.3 billion pre-paid lease with a consortium that included the Ontario Teachers' Pension Plan Board, and Hastings managed infrastructure funds Utilities Trust of Australia and The Infrastructure Fund. The proceeds were used to repay the debt

[2] Although for technical reasons a rotation system may be employed under some scenarios, such that each reverse osmosis train is operated for a period of time in sequence rather than being placed in full preservation.

[3] To date, there has been insufficient operating experience to verify energy efficiency estimates across the spectrum of drinking water possibilities, although energy efficiency at full production during the two-year proving period was generally better than anticipated.

held against the asset, with net proceeds of more than $300 million invested in the NSW Government's infrastructure fund – Restart NSW.

The lessee must demonstrate good stewardship of the assets, including its ability to operate and maintain the plant in a responsible and reliable way. At the conclusion of the lease the assets will transfer to the lessee subject to:

- complying with water quality rules
- operating the plant in a safe and reliable way
- expanding the plant if/as requested by the Government, and
- complying with all licences.

The possibility that SDP could enter into supply agreements with customers other than Sydney Water was a key factor in ensuring that the objectives of the refinancing process could be achieved.

3.2.2 Operating rules

Following completion of all the necessary contracting arrangements for the desalination project, Sydney Water commissioned the Centre for International Economics (CIE) to assess the community costs and benefits of different operating rules for the plant. The objective of the study was to assess whether any of the rules would result in a net community benefit compared to a scenario where the desalination plant never produced drinking water. The analysis considered not only the direct financial impacts of operating (or not operating) the plant, but also broader social costs and benefits such as the length of time spent in water restrictions.

The study considered three rules, and compared the outcomes of each rule against a base case scenario where the desalination plant did not operate at all. The rules were:

- A 30/40 rule, where the desalination plant starts operation when dams fall to 30 per cent, and continues production until dam levels rise above 40 per cent. That is, the desalination plant only operates during an extreme drought.
- A 70/80 rule, where the plant operates when dam are below 70 per cent and continues production until dam levels return to 80 per cent.
- An 80/90 rule, where the plant starts to operate at 80 per cent dam levels and continues production until dams return to 90 per cent full.

The study concluded that, of the options considered, net benefits would be greatest under the 70/80 rule. Based on the CIE analysis, the 30/40 rule did not maximise net benefits because it would not materially affect the level or duration of water restrictions. Conversely, the 80/90 rule would not maximise net benefits because the additional volume of water had a relatively high cost compared to other sources that would be readily available at higher dam levels. The 70/80 rule was subsequently adopted in the Metropolitan Water Plan and is also reflected in the Network Operator Licence of SDP.

More recently, the NSW Government has been reviewing the Metropolitan Water Plan. An important part of this review has been the use of a hydro-economic model known as MetroNet. As part of this process, a wide range of potential operating rules has been analysed, compared with

the relatively limited number of rules assessed in the CIE study. Similar to the original CIE study, this assessment has been broadly based on the operating and maintenance contract costs, as well as the social costs of water restrictions.

3.3 Legislative requirements

SDP's operations are governed by various legislative instruments which influence its operations to varying degrees.

SDP holds a Network Operator licence and a Retailer Supplier licence under the *Water Industry Competition Act 2006* (WICA). The Network Operator Licence requires SDP to operate and maintain the desalination plant and associated infrastructure to accepted industry standards such as the Australian Drinking Water Guidelines. The operating and maintenance strategies of SDP must be documented in an Infrastructure Operating Plan, and this plan must be approved by IPART. Consistent with the operating rules in the Metropolitan Water Plan, SDP must operate with "the **objective of** maximising the production of drinking water" (emphasis added) when dam levels fall below 70 percent, and continue to do so until dam levels rise above 80 percent, except during any restart phase. The obligation to produce drinking water should be interpreted with reference to the capacity of the plant, which is defined in the licence as being measured as "a rolling average over 365 days" (Schedule A, clause (e)(a)). Taken together, Sydney Water believes that SDP has the ability to make-up unexpected production short-falls by producing additional water during the year, rather than a strict obligation to operate at full capacity each and every day of the year.

The Retail Supplier Licence allows SDP to supply water from the desalination plant (provided the plant is operating in compliance with its Network Operator Licence) for drinking water and other purposes for which drinking water could be safely used. SDP may supply water to any person, other than a small retail customer, in Sydney Water's area of operations.

3.4 Contracts entered into by SDP

3.4.1 Operating and maintenance agreement

The current regulated prices for SDP were based on a review of the 20 year Operating and Maintenance (O&M) contract between the operator of the plant (Veolia) and SDP (which, at the time, was a wholly owned subsidiary of Sydney Water). Similar long-term agreements are in place between SDP and Veolia for operation and maintenance of the drinking water pumping station located at Kurnell, and the water supply pipeline between Kurnell and Sydney Water's water distribution system at Erskineville.

A base level of profit and overhead was included in the fixed O&M charges, which reflects an appropriate rate of return for the operator in performing its water security role. Consistent with the financial indifference principle, this ensures that investor returns do not vary with the level of drinking water production. Although this means that the variable O&M charges are largely cost-reflective, the contract provides several mechanisms designed to incentivise more efficient operations. Together, these contractual mechanisms allow SDP to achieve a financial return on decisions that optimise the performance of the plant. Provided that customers also have a means

of benefiting from these improvements, Sydney Water remains supportive of these incentive mechanisms.

3.4.2 Electricity and renewable energy certificate contracts

Similar to the O&M contract, the current regulated prices for SDP were derived following a review of contracts between SDP, then owned by Sydney Water, and its suppliers of electricity and renewable energy certificates (the latter now known as Large Generation Certificates). Both contracts have a 20-year term, and were procured through the use of a competitive tender process designed to identify the best value for money outcome to meet the project objectives.

The conditions of approval for the desalination project required the use of 100 per cent renewable energy. Although this can be achieved in different ways, including market purchases of tradeable renewable energy instruments such as Large Generation Certificates (LGCs), a clear preference of Government and other stakeholders was to encourage the introduction of a new and clearly identifiable source of renewable energy generation in NSW. Given uncertainty about future operation of the desalination plant, and recognising that instruments such as LGCs can be re-sold to other parties, SDP therefore agreed to purchase a minimum volume of LGCs each year (equivalent to operating the plant at 50 per cent of capacity). Similar provisions apply under the electricity supply agreement, although the minimum annual volume of electricity is set at a level that is equivalent to operating the desalination plant at full capacity for the year.

Although these arrangements may leave SDP with excess LGCs and/or electricity in some years, the contracts also provide mechanisms that allow SDP to manage this exposure. For example, SDP can specify that surplus electricity may only be resold at peak prices rather than spot prices. As discussed later in this submission, financial outcomes can vary significantly depending on how any surplus electricity is managed. In addition, there are no restrictions on the ability of SDP to re-sell surplus LGCs, including holding them in the expectation that prices may rise in future years.

Under the Terms of Reference (TOR) set by the Minister for Finance and Services, gains or losses from the sale of surplus LGCs and electricity are passed through to Sydney Water since, under the current operating regime, the loss or gain is only realised when SDP is performing its water security role for the whole community.

To the extent that a more flexible operating regime results in SDP producing drinking water at less than full capacity, SDP may be left with surplus electricity and/or LGCs and the relevant contract adjustment provisions will apply. However, the TOR would prevent these gains or losses from being passed on. Since these gains and losses relate to the water security function of SDP, it seems appropriate that they are shared on an impactor pays basis. However, this may also result in an inefficient allocation of costs between Sydney Water and third party customers of SDP, creating the potential for perverse outcomes.

Sydney Water has recommended changes to the way that energy gains and losses are shared across customers, including refinements to ensure that SDP has appropriate incentives to actively manage its exposure to energy price adjustments.

3.4.3 Water Supply Agreement

The Water Supply Agreement specifies arrangements for the supply of drinking water from SDP to Sydney Water.

Under the Water Supply Agreement, Sydney Water will take delivery of all water produced by the plant that is not sold to other parties provided the water meets agreed quality specifications and complies with the Australian Drinking Water Guidelines (ADWG) set by the National Health and Medical Research Council (NHMRC)[4]. There is no requirement for SDP to supply a minimum volume of water to Sydney Water. In addition, SDP does not need consent from Sydney Water to enter into agreements with other customers for the supply of drinking water. However, an Interconnection Agreement and Operating Protocols specify the arrangements that apply when SDP wishes to supply drinking water to other customers. This is mainly because, in the absence of a direct pipe connection, any drinking water produced by SDP must be delivered via Sydney Water's water distribution system. As the water distribution system is already very dynamic, introducing water from other sources requires careful management.

The Water Supply Agreement also specifies the conditions under which Sydney Water may specifically request the supply of drinking water, including:

- to mitigate the effect of a public health incident, or
- to ensure security of supply or network stability during periods of outages, unavailability or maintenance on any water industry infrastructure in Sydney Water's area of operations.

SDP is only required to respond if doing so would not be in breach of any law or its WICA licence, and if satisfactory arrangements are in place to recover the relevant costs (including reasonable restart costs). In practice, such requests would only be necessary if dam storages had risen above the shutdown trigger in the operating rules, since the desalination plant would otherwise be operating at full capacity. As such, the Water Supply Agreement effectively anticipates that water will only be supplied to Sydney Water outside the operating rules under exceptional circumstances. In any case, given the regulated variable water usage charge is currently set at zero for supply to Sydney Water, there is no incentive for SDP to supply water to Sydney Water outside the operating rules. Sydney Water believes it may be reasonable for a regulated charge to apply when it elects to call water under the Water Supply Agreement. However, the nil price should remain at all other times. Further details are in Appendix 1.

[4] SDP is also required to meet ADWG under its WICA licence.

4 Refining the price structure

Key messages

- Sydney Water first and foremost supports the ongoing purpose of SDP to provide water security, and secondly supports the sale of drinking water to third parties at fair and equitable prices, so long as Sydney Water does not have to subsidise these sales.
- The pricing structure adopted by IPART encourages SDP to be financially indifferent between operating and shutdown mode. This is because of the unique situation where SDP's primary purpose is for water security and there will be long periods when the plant is not operating.
- We believe that unregulated pricing is inconsistent with the financial indifference principle described in the TOR. In addition, SDP's proposal for a separate adjustment mechanism for energy gains or losses that occur when the plant is in operation could result in a perverse incentive where more costly desalinated water would be more affordable than dam water, if Sydney Water's customers are required to contribute to the costs of energy losses.
- The financial indifference principle requires charges for variable components linked to supply to be separate from charges for making the plant available. The proposal to split the fixed charges into separate elements is consistent with this principle and also has the benefit of increasing transparency.
- Sydney Water however does not believe that the proposed split between base and incremental charges is sufficient when the plant is operating. Depending on the level of fixed operating costs included in the base water security charge, there could be a perverse incentive where more costly desalinated water would be more affordable than dam water. In effect, Sydney Water customers would be subsidising other users.
- We recommend that IPART implement incremental fixed charges that include all fixed operating costs needed for the production of drinking water by SDP.
- Sydney Water does not instruct SDP to either operate or shutdown. The operation of the plant is governed by the operating rules, SDP's WICA network operator licence and the Water Supply Agreement. On shutdown SDP is responsible for instructing the operator which shutdown mode to implement and managing any risk associated with mode selection.

4.1 The role of SDP in the water market

SDP was built to increase Sydney's water security during drought. SDP's role is to provide a source of non-rainfall dependent drinking water that can be relied upon when Sydney's total dam

storage level is below 70 per cent and to continue to do so until the total dam storage level reaches 80 per cent. This operating regime was determined by the Metropolitan Water Plan following cost benefit analysis, as it strikes the right balance between the cost of operating the plant, the benefits of producing the maximum amount of water for the community and environment, and minimising spills from Warragamba Dam.

SDP may also sell non-rainfall dependent water to large customers, including during periods when dam levels are above 80 per cent. While supply to individual large customers may be beneficial in certain circumstances, and should not be precluded where it provides a net benefit, Sydney Water supports the original intent of the desalination plant and the associated operating rules – that is, the primary purpose of SDP is water security. The regulatory regime and current pricing structure fit this purpose.

While assumptions can be changed, broadening SDP's objectives may warrant IPART considering calls from others for a review of government's priorities for the water industry. We understand that IPART cannot regulate based on a potential future market scenario, but must make pricing decisions in the context of current policy settings and legislative frameworks[5]. However, these settings and frameworks are not set in stone, and it may now be appropriate for the objectives of SDP to be reconsidered. This could occur as part of a broader industry review, as recently called for by a number of parties during IPART's current and inaugural review of wholesale pricing.

The potential for this broader industry review, which is a matter for Government, should be taken into account when considering an appropriate length for the next SDP determination.

4.2 Water pricing to support or enhance SDP's role

SDP is the only supplier of non-rainfall dependent drinking water in NSW. SDP was declared a monopoly supplier by the Minister for Finance and Services and therefore has its prices regulated by IPART. SDP's monopoly services are making the desalination plant available to supply non-rainfall dependant drinking water, and supplying non-rainfall dependant drinking water. SDP does not provide any other services. IPART is required to set prices for the water services provided by SDP in accordance with a Terms of Reference (TOR) issued by the Minister for Finance and Services in 2012 and the *Independent Pricing and Regulatory Tribunal Act 1992*.

The SDP Issues Paper looks to broaden the scope for competition in the market through revised pricing arrangements that make it more attractive for third parties to buy water from SDP when dam levels are high. Sydney Water has always supported competition where it is in the long-term interests of customers. We welcome efforts to remove barriers that might discourage the use of SDP to supply water where this enhances economic efficiency. However the previous review of the Metropolitan Water Plan, and more recent analysis commissioned by SDP, have concluded that operating the plant below full production would not be efficient for water security as it would result in significant additional costs for customers for minimal benefit. Operating SDP below full output to supply a third party could however reduce the costs Sydney Water customers would otherwise

[5] *IPART, Prices for wholesale water and sewerage services, Sydney Water Corporation and Hunter Water Corporation, Water — Draft Report, November 2016, page 1*

have to pay. Reducing the costs of SDP that are borne by Sydney Water would be in the long-term interests of our customers.

Amongst other things, the TOR require that the pricing structure adopted by IPART "*should encourage SDP to be financially indifferent*". This financial indifference principle is a critical element of the SDP regulatory framework. It was required due to the unusual nature and role of SDP. SDP's primary purpose is to provide drought insurance to Sydney and thus it was anticipated that it would have long periods where it would not operate. Further, when it is intended to operate is largely a function of government policy and the Metropolitan Water Plan (i.e. the operating rules). This is outside the control of SDP.

The financial indifference principle ensures that SDP can earn its return on and of capital, and certain fixed operating costs, irrespective of whether it is operating. This ensures that SDP is not incentivised to operate the plant in an inefficient manner that is not in the best interests of all water customers in Sydney. It is for this reason that there must be separate charges for the supply of water versus making the capacity of the plant available for drought insurance purposes. The architecture of the charging structure must ensure that the charges for making the plant available do not include variable components linked to supply.

As an example, the financial indifference principle can be seen through the operation of the mechanism for allocating energy gain and losses. SDP's energy supply agreements require SDP to pay for a minimum annual volume of electricity and LGCs at a fixed price. When the plant is in full production SDP will have an opportunity for gain or loss relative to the market price of the electricity and LGCs secured through this contract which is paid for by customers through the water usage charge. When the plant is not operating the surplus electricity and LGCs are resold with a realised gain or loss versus the market price which is paid for by customers through the energy adjustment mechanism.

The operating flexibility outlined by IPART includes operating below full production outside of the water security role. If SDP was to operate at any level below full production the current pricing arrangements would not leave them financially indifferent. While the water usage charges would cover SDP's electricity and LGCs used to produce water, there would still be a gain or loss resulting from the resale of unused electricity and LGCs. Customers would not pay for this realised gain or loss as the energy adjustment mechanism only operates when the plant is in shutdown or restart mode. The mechanism does not operate if the plant is producing drinking water. In other words there would be a disincentive for SDP to operate below full production. Any change to the operating assumption of the plant would therefore need to consider how to maintain financial indifference.

4.3 Our response to IPART's questions

1. **Under the Terms of Reference, the prices for making the plant available should be a periodic payment. These prices should reflect fixed costs, including the fixed component of operating costs, a return of assets and a return on assets.**

   Should we refine the current price structures for making the plant available by splitting the fixed charges into the following two components:

- **a base 'water security' charge reflecting the minimum costs of maintaining the plant (payable in all shutdown and operation modes), and**
- **mode-dependent incremental service charges reflecting the different fixed operating costs in each shutdown and operation mode?**

The financial indifference principle requires that the charges for making the plant available do not include variable components linked to supply. The proposal to split the fixed charges into separate elements is consistent with this principle and also has the benefit of increasing transparency. Sydney Water however does not believe that the IPART's proposed split between base and incremental charges is appropriate when the plant is operating.

IPART's issues paper suggests that the daily incremental fixed charge for plant operation mode should be $37,034, or an annual cost of $13.5 million. This is calculated assuming a base water security charge of $391,257, which appears to be the current regulated daily charge for a water security shutdown (expressed in dollars of 2016-17). However, Sydney Water notes the fixed costs incurred during water security mode are also needed when the desalination is required to produce drinking water. For example, a certain level of maintenance is needed to ensure the plant is available to produce drinking water when required. As such, while the cost is incurred during shutdown, it is necessarily incurred in order to support the production of drinking water. Sydney Water therefore believes that all fixed operating costs should only be allocated to the proposed incremental fixed charge and shared on a user pays basis.

As shown in Box 4-1 this would require that the incremental charge for plant operation be set at $95,097 daily to recover these fixed operating costs costs, with total fixed costs of around $35 million a year. An amount below this could create the risk of a perverse incentive where more costly desalinated water would actually be more affordable than dam water. This results from the fact that, since the base 'water security' charge is shared on an impactor pays basis, Sydney Water customers would be effectively paying a share of the costs needed to support plant operation, even if Sydney Water is not taking any water from SDP. In other words, third party customers of SDP would not be paying their share of all incremental fixed costs needed to make the plant operational.

We therefore recommend that IPART reduce the base 'water security' charge so that it does not include any operating costs of SDP. A decision to set the base charges above this level would benefit potential third party customers of SDP to the detriment of all other water customers. Refer to Appendix 2 for further details.

Box 4-1 Incremental fixed charge in operating mode

Payment in Full Operation ($2016-17 million)

SDP forecast operating expenditure	96.5
Annual water supply (ML)	90,000
Water usage charge	61.8
Fixed operating costs	**34.7**
Daily incremental fixed charge	0.095

2. Are the current four shutdown (and restart) modes still appropriate?

Sydney Water believes the current four shutdown (and restart) modes remain appropriate. We believe it is appropriate to replicate the costs of these differing modes in the pricing structure through separate charges for each of the modes.

SDP has a 20 year operation and maintenance contract with Veolia. This contract has different operating costs depending on which of four shutdown (and restart) modes the plant is operating in. The models were proposed by the operator and are intimately linked with the design of the plant. Sydney Water does not instruct SDP to either operate or shutdown. The operation of the plant is governed by the operating rules and 'nil price' for water outside these rules. On shutdown SDP is responsible for instructing the operator which shutdown mode to implement. SDP is therefore best placed to manage any risk associated with selection of an inefficient mode.

Sydney Water has some concerns about the protocol as presented by SDP. If a minimum run time were included in the operating rules it may reduce the likelihood that short or medium term shutdowns will be efficient for water security. Their decision of whether to implement a long or water security shutdown should be based on dam levels at the time of shutdown and the historic rate at which dam storages deplete during drought conditions. A longer shutdown mode will extend the duration of a restart, reducing SDP's ability to deliver drinking water.

3. Under the Terms of Reference, the prices for the supply of drinking water should reflect all efficient costs that vary with output.

Does the unit cost (per ML of output) vary depending on the amount of water produced? If so, should we set usage charges to accommodate varying levels of output?

The efficient cost of energy varies with the output of the desalination plant. The current Terms of Reference and pricing structure assume that SDP will either be supplying water at full output, or be in shutdown mode. Operating at reduced level would undermine the financial indifference of SDP as the energy adjustment mechanism does not operate when the plant is supplying water. The Terms of Reference apply to SDP both when it is shut down and when it is supplying water. We reject SDP's contention that financial indifference does not apply outside the operating rules.

SDP presents two options for addressing financial indifference that do not require changes to the Terms of Reference; unregulated prices which include a forecast of energy adjustment foregone, and a mirror energy adjustment that operates when the plant is supplying water. We have

concerns with both approaches. Unregulated arrangements could give rise to incentives for SDP to supply or not. If prices outside the operating rule included the cost of the energy adjustment it would act as a disincentive to third party customers and undermine the incentives in place for SDP to seek these customers. However a separate adjustment mechanism for energy gain or losses that occur when the plant is in operation could create a perverse incentive that more costly desalinated water would be more affordable than dam water. This would result due to the fact that Sydney Water customers would be subsidising the cost of operation through paying for these new energy adjustments. That said, it could result in customers bearing a cost of energy losses even if their decision to buy water from SDP actually helped to reduce the magnitude of that loss.

4. **SDP currently has one-off transition charges to reflect the fixed costs when SDP is moving between modes.**
   - **Are the current transition charges still appropriate?**
   - **Should the transition charges be adjusted if SDP operates more flexibly outside its drought response role (i.e., when dam levels are high)? If so, how?**

Sydney Water supports the existing structure, where SDP gets paid depending on which operating mode it is in, and transition charges that apply when moving between modes. SDP has stated that the current transition charges are not cost reflective and have proposed to increase the Transition to Restart charge from $5.5 million to around $38 million.

Sydney Water has sought to understand this increase. Energy costs were, perhaps inadvertently, excluded from the current regulated charges at the last determination. The electricity that SDP would be required to pay for during a restart is capped at 12,168 megawatt hours, which is likely to cost less than $2 million per restart. SDP has also stated that the cost of pipeline flushing was not provided for in the restart allowance. However, under the Water Supply Agreement, Sydney Water has to pay for efficient electricity costs to the extent that they are not recovered through the price determination and supply a reasonable amount of water to purge the pipeline following a shutdown at no cost. We note that further detail of the increased costs have been deemed confidential by SDP.

The increase in cost may be for a substantial quantity of reverse osmosis membranes, particularly as the charges proposed by SDP are now time dependent and increase depending on the year a restart is called. Given the extended water security mode, which was not contemplated by the O&M contract, it is understandable that there may be some additional costs. The efficient cost of membrane replacement should, however, be known prior to recommissioning testing following SDP's repair for storm damage. While we agree that the efficient cost of replacement should be recoverable by SDP, to ensure that end customers do not bear unnecessarily high costs, we believe that (1) as membranes provide benefits over several years, the costs should be capitalised over their economic life and (2) it would be more appropriate for customers to only bear the efficient costs once they are known. IPART should therefore either implement a shorter determination period or allow a pass-through of the increase in return on and of capital for new membranes once the cost is incurred.

The transition charges are currently shared between parties based on the proportion of SDP water used in the preceding 12 months of operation. Both this method and the impactor pays principle could result in Sydney Water's customers paying a disproportionate share of transition charges if SDP were to operate outside the operating rules providing water to third party customers, particularly if there are multiple transition events incurring multiple restart charges. We urge IPART

to adopt a more equitable methodology for the allocation of costs that ensures Sydney Water's customers do not subsidise other customers of SDP. A third party should bear all costs for transitions resulting from their requests for drinking water.

5. **SDP has a separate charge for its pipeline asset (i.e., distinct from the plant), which applies in all modes of operation.**
   - **Should we continue setting a separate charge for the pipeline?**
   - **If so, should the pipeline charge vary by mode of operation?**
   - **How should pipeline charges be shared in the event SDP has multiple customers?**

Mode specific charges were implemented because operating costs for SDP varied by mode. SDP has stated that pipeline fixed costs do not vary with the operating mode of the plant and so we believe that a single pipeline charge would be appropriate. We agree that the sharing basis of the pipeline fixed cost should be consistent with that for the base 'water security' charge.

5 Refining the cost sharing principles

Key messages

- While Sydney Water is SDP's only customer, there are no cost sharing issues with base and incremental charges as all of Sydney Water's customers contribute to the cost of desalination security and supply.
- In the situation where SDP is running and has customers other than Sydney Water, we support the sharing of costs between impactors and users according to the benefit received by each.
- Impactors (all customers) should share the following costs as they receive the benefit:
    - Fixed water security charges
    - Pipeline charges
    - Network charges
- Users (SDP's customers) should share the following costs as they receive the benefit from:
    - Incremental fixed (operating) charges
    - Usage charges
- We do not support extending impactor pays during drought as this would result in the higher costs of operation being passed through to Sydney Water's customers, even if there are other SDP customers. It would be perverse and inequitable if a third party customer should have reduced costs during a drought. Sharing usage and incremental fixed charges at all times based on the user pays principle would ensure equitable treatment of all customers.
- We do not support the present structure for cost sharing of transition charges, in the event of a third party request for supply from SDP. Sydney Water customers should not bear the cost of transition charges that result from the commercial supply of water to third parties. We urge IPART to adopt a more equitable methodology that ensures Sydney Water's customers do not subsidise other customers of SDP.

5.1 Understanding the cost sharing principles

Sydney Water's customer base has a far greater reliance on the drought insurance provided by SDP than a third party customer, as we use the majority of the water supply (SDP supplies a maximum of 15 per cent of the total system supply). The impactor pays principle allocates costs according to the proportions in which the parties created the 'drought insurance premium', or the need to incur the cost.

There is significant complexity in trying to understand the impact these sharing principles have across the various operating modes and assessing the potential impacts on customers at differing levels of water production. The current user pays mechanism allocates costs (even when SDP is in shutdown) based on the customer's (historical) share of the water SDP has supplied, which is not linked to the customer's impact on the total water system demand and hence the need to incur the 'drought insurance premium'. In other words, under user pays if a third party customer purchased 100 per cent of the plant's production when dams were high, that customer would currently be forced to pay 100 per cent of the plant's fixed costs, even in drought. This is not an equitable arrangement. It does not align with the benefits of the plant, which are shared by the whole community (largely our customer base), plus it limits the attractiveness for any third parties to use the plant when dams are high. Box 5-1 compares the outcomes under the user pays and impactor pays mechanisms.

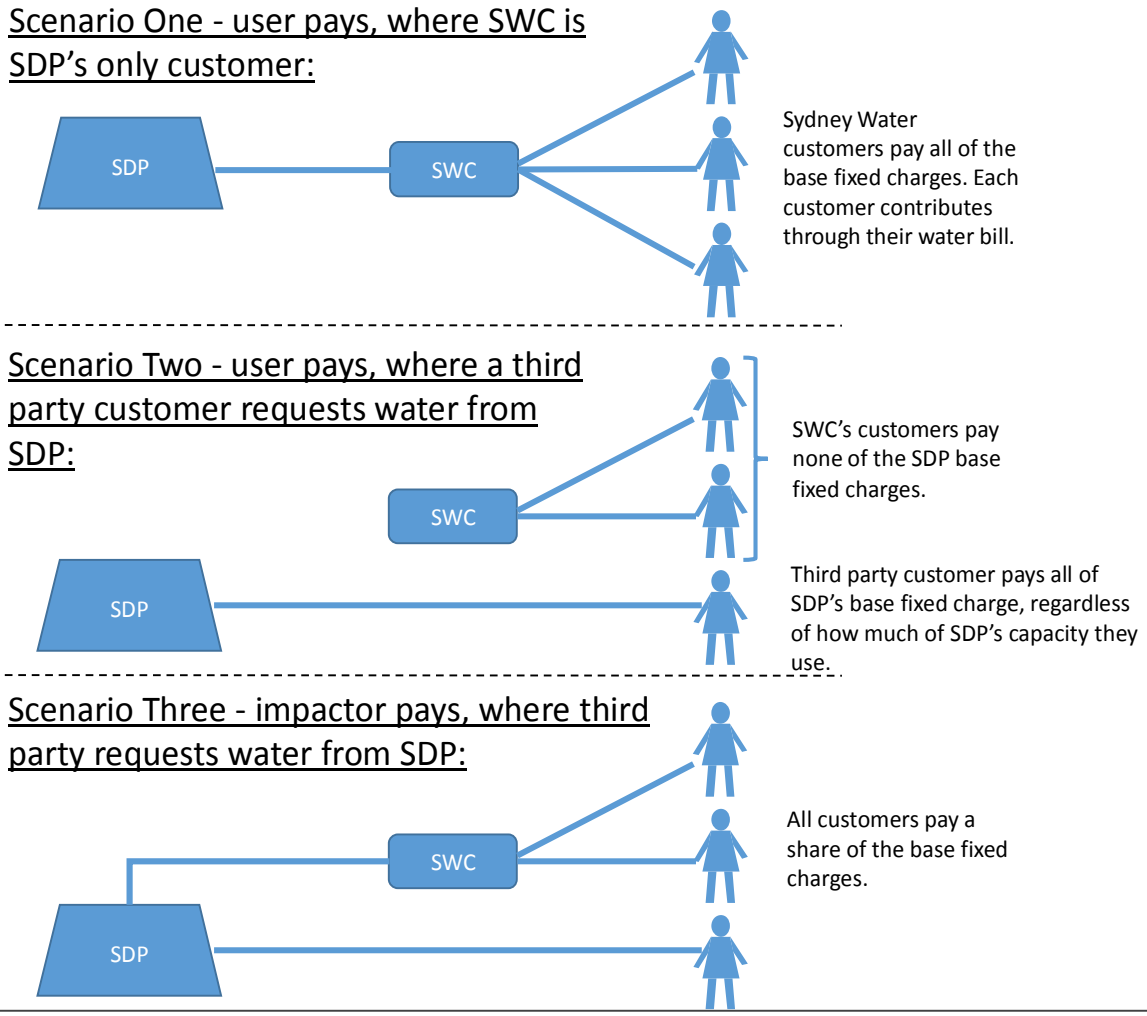
Cost sharing is not an issue at present. Sydney Water is currently SDP's only customer and bears all the efficient costs of the plant. Implementing an impactor or user pays methodology will have no impact while this remains the case. It appears that IPART is seeking to remove barriers that may discourage third party customers. This cost sharing should ensure equitable treatment of all customers and be based on which customers derive benefit for the services provided by SDP. The potential merit in the impactor pays principle is that if it encourages third party customers to request water from the plant when dams are high, our costs will be reduced compared to the current framework. However, Sydney Water's customers should not bear any additional costs resulting from the commercial supply of water to third parties.

Box 5-1 Removing barriers to competition – SDP base charge: impact vs user pays

Under the existing **user-pays** framework, only the customer/s who access SDP directly will pay the base fixed charge. Scenario One shows Sydney Water as SDP's only customer and all Sydney Water's customers contributing to the SDP base fixed charge through their water bills. If a third party was to access SDP directly, see Scenario Two, that third party customer would bear all of the SDP base fixed charge (as Sydney Water is not purchasing any water). This is inequitable, given that the premise of the base charge for the desalination plant is effectively a drought insurance premium, to which all water users in Sydney should contribute.

We support an **impactor-pays** framework for the base charge, see Scenario Three, as this would ensure that all customers would contribute to SDP's base fixed charge, regardless of the source of the water they use.

Scenarios for who pays base fixed charges:



Third party customers of SDP can only exist when the plant is supplying desalinated water. Prior to this, unless they are new customers, these customers are Sydney Water customers. As Sydney Water customers they will contribute to the cost of SDP through their water bill. Sydney Water applies the cost of SDP fixed charges into the service charges billed to our customers on an equivalent meter basis. The cost of SDP variable charges are applied to the water usage charges billed to our customers. Table 5-1 illustrates the impact that the sharing methods have on the proportion of charges paid by a third party, and the remaining Sydney Water customer base, once that customer has contracted directly with SDP.

The incremental fixed charge should be borne by users, not impactors. However, under the existing framework, this amount would be passed onto impactors through an increase to the base charge. If the incremental fixed charge is not passed through to users only, there exists the potential for a perverse scenario to arise where desalinated water is cheaper to buy than dam water, as the impactors (Sydney Water's customers) are subsidising the operating costs of SDP resulting in cheaper water for users. Box 5-2 shows relative prices for different scenarios for cost-sharing the incremental fixed charge. For commercial reasons we cannot show the absolute dollar amounts.

Box 5-2 Incremental fixed costs

Under the existing cost allocation framework, the incremental fixed cost are included in the base charge. While Sydney Water is SDP's only customer, this doesn't matter as all costs are borne by Sydney Water's customers. However, if a third party was to buy water directly from SDP, then the incremental fixed charge would be borne by the impactor (Sydney Water's customers) and not the user (third party customer of SDP). We believe that all operating costs (incremental fixed + incremental variable) should be borne by the user, otherwise the perverse situation could arise where more expensive to produce desalinated water is cheaper to buy than dam water.

In the below schematic, scenario one shows independent operations i.e. what the relative cost would be if **all** SDP's costs were user pays. While this demonstrates how expensive desalinated water is to produce, we do not agree with this cost sharing framework. Scenario two shows our preferred cost sharing framework, where all water customers (impactors) contribute to the base charge, and all operating costs (incremental fixed + variable) are user pays. Scenario three is the existing cost sharing framework, where Sydney Water customers are subsidising the operating costs of desalinated water and the perverse situation arises where desalinated water is cheaper to buy than dam water. As mentioned above, this would only occur if SDP had a customer other than Sydney Water. See Appendix 2.

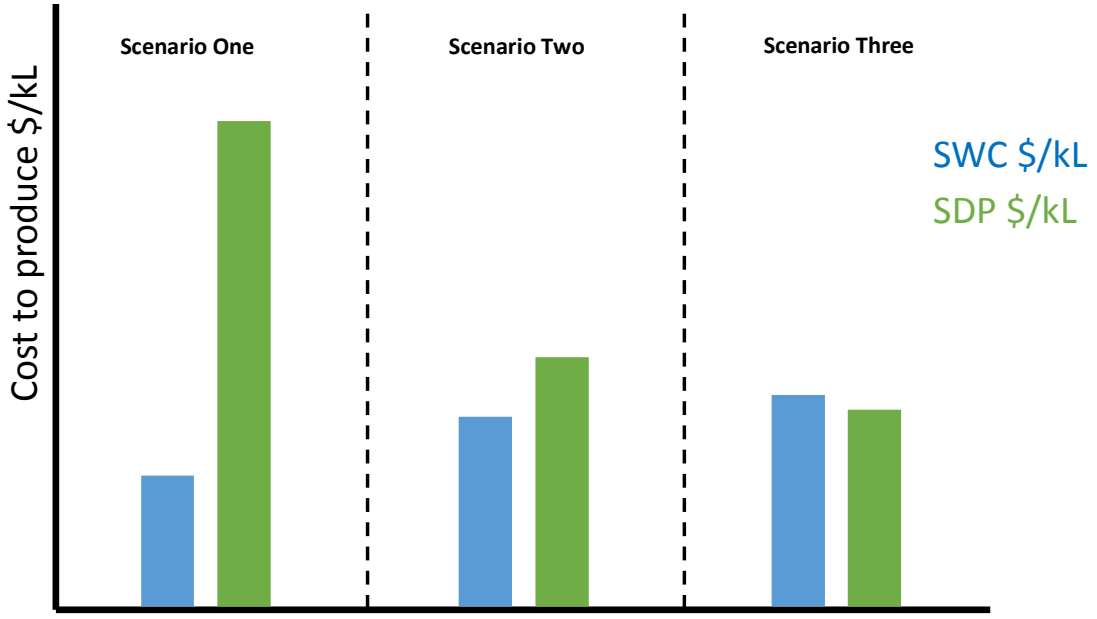


Table 5-1 Impact of sharing methods on regulated charges

Regulated Charge	Sydney Water Billing	Principle	Sharing Method
Base Service Charge	Fixed charge allocated by number of equivalent meters	All customers should pay for cost of water security measures	Impactor
Pipeline Charge	Fixed charge allocated by number of equivalent meters	All customers should pay for cost of water security measures	Impactor
Incremental Fixed Charge	Fixed charge allocated by number of equivalent meters	Customers should pay costs of water supply in proportion to the % of SDP water received	User
Water Usage Charge	Variable charge allocated volume of water used by customers	Customers should pay costs of water supply in proportion to the % of SDP water received	User
Network Charges	Fixed charge allocated by number of equivalent meters	All customers should pay for cost of water security measures	Impactor
Transition Charges (within operating rules)	Fixed charge allocated by number of equivalent meters	All customers should pay for cost of water security measures	Impactor
Transition Charges (outside operating rules)	Fixed charge allocated by number of equivalent meters	Sydney Water customers should not bear any costs for operating flexibility that benefits third parties	Requester

Transition charges are currently shared based on the proportion of water used in the preceding 12 months of operation. Sydney Water customers should not bear the cost of transition charges that result from the supply of water to third parties. However, the current and proposed sharing methodology could see Sydney Water customers pay these costs, particularly if there are multiple transition events. We believe it is appropriate to replicate the costs of these differing modes in the pricing structure through separate charges for each of the modes. However we urge IPART to adopt a more equitable methodology for the allocation of costs that ensures Sydney Water's customers do not subsidise other customers of SDP. A third party should bear all costs for transitions resulting from their request for desalinated water.

Flexible operation by SDP may reduce the circumstances where transition charges will be paid by Sydney Water. The transition charges are payable by Sydney Water to SDP on transition however Sydney Water recovers these charges from our customers over the following 12 months.

The benefit of avoided transition charges are available to both Sydney Water and third party customers. After paying a transition charge to SDP, Sydney Water recovers this cost of transition from our customers through the service charge over the following 12 months. There is a risk therefore that Sydney Water may not recover a customer's full share of the transition charge if they contract with SDP directly within 12 months of a transition to operating mode for water security. However, we believe the impact of this will be minor. Sydney Water would also avoid a subsequent transition charge into a shutdown mode and any future transition charges into operation where SDP continues to supply desalinated water to a third party outside of water security. We therefore do not believe that there should be any compensation for transition charges between Sydney Water and a third party customer.

Table 5-2 Symmetric benefit of avoided transition charges

Scenario	Impact on Third Party Customer	Impact on Sydney Water
SDP continuing operation following drought	Avoided transition charge to operating mode outside water security	Avoided transition charge to shutdown mode for water security Shortfall in cost recovery through loss of customer
SDP transition to operation outside water security	Incurs cost of transition charge to operating mode outside water security	Avoid transition charge to operating mode for water security Avoid transition charge to shutdown mode for water security

5.2 Our response to IPARTs questions

6. **How should SDP's base 'water security' costs be shared between customers?**
   - **Should SDP's base 'water security' costs continue to be shared between SDP's customers based on the user pays principle? That is, should this base charge be shared between Sydney Water and any other SDP customer based on their respective share of total drinking water supplied by SDP?**

   Or

   - **Should SDP's base 'water security' costs be shared between bulk water customers based on the impactor pays principle? That is, should this base charge be shared between Sydney Water and any other bulk water customers based on their respective share of total water system demand (being bulk water sourced from both dams supplying greater Sydney and the desalination plant)?**

We believe that sharing the base 'water security' charge, network charges and pipeline charges on an impactor pays principle is an appropriate allocation. SDP's primary purpose is to provide drought insurance to Sydney. The base 'water security' charge, network charges and pipeline charge reflects the premium for this insurance. SDP's operation during drought reduces the severity for all water users in Sydney. The cost of this insurance policy should be paid by all water customers to ensure customer equity. Similarly the cost of other water security measures that benefit all customers, such as the Shoalhaven Transfer Scheme, should be paid by all customers.

7. **If the impactor pays principle applies to SDP's base 'water security' costs, are there any circumstances where bulk water customers should not contribute to these costs?**

There are no circumstances where bulk water customers should not contribute to SDP's base 'water security' costs. Desalination is one of three measures identified in the 2010 Metropolitan Water Plan to reduce reliance on dams along with water recycling and water efficiency. These water conservation measures reduce water use, and this is reflected in lower usage bills.

We do not support SDP's claim that customers who only wish to receive water from SDP when dam levels are high should not be required to pay the water security charge. All water customers that are connected to the potable water network are reliant on dams and the insurance that SDP provides, and should therefore contribute to the base 'water security' charge.

8. **How should incremental fixed costs and usage charges be shared between SDP's customers?**
   - **Should the incremental fixed costs be shared between SDP's customers based on the user pays principle? That is, should the incremental charges be shared between Sydney Water and any other customers based on their respective share of water purchased from SDP?**

The costs of making the plant available and supplying water should be borne by the customers that request this commercial supply of water. Usage charges and incremental fixed charges vary as the plant is called to supply water. Water supplied outside the operating rules is not required for water security reasons but rather commercial reasons. As such, the costs of making the plant available and supplying water should be borne by the customers that request this commercial supply of water. These third party customers of SDP would also likely need to negotiate and pay for access

arrangements with Sydney Water to transport the desalinated water through our water network. Sharing these charges based on the user pays principle achieves this purpose.

9. Is there a case for extending the impactor pays principle to all SDP's costs during drought – i.e., incremental fixed costs and/or usage costs?

The current governance of SDP is silent on a hierarchy of claims on SDP's production during a drought. If impactor pays was extended during drought the higher costs of operation would be passed through to Sydney Water's customers potentially reducing the cost for third parties. It would be perverse and inequitable if a third party customer should have lower costs than they would face when the dams are full. Sharing usage and incremental fixed charges based on the user pays principle would ensure equitable treatment of all customers.

10. How could prices (both fixed and usage charges) be set to allow greater operating flexibility to enhance efficiency?

Under the Terms of Reference IPART is required to set prices that encourage SDP to remain financially indifferent as to whether or not it supplies water. Financial indifference ensures that SDP is not incentivised to operate the plant in a manner that is inefficient. Unregulated pricing agreements could create an inefficient incentive for SDP and would not be consistent with financial indifference. A schedule of prices for varying levels of production could also produce an inefficient incentive unless a separate adjustment mechanism for energy were implemented as proposed by SDP.

6 Refining the incentive mechanisms

Key messages

- Similar to SDP's incentives for water production during and out of drought, we believe that SDP should be incentivised to reduce costs, maximise availability, and minimise losses on the resale of electricity and Large Generation Certificates.
- In principle we see value in a 'soft start' mode during water security, however there are implications for water quality and network capability that Sydney Water would need to consider, and therefore we should not be forced to take and pay for this water. Where we elect to accept the water, we believe it is fair that we pay the equivalent of the regulated price. This may require amendments to the abatement mechanism.
- Sydney Water customers should never be forced to pay for water outside of SDP's water security role. However, if Sydney Water requested desalinated water and SDP were able to supply it when the dam levels are high, it would be appropriate for SDP to be paid a reasonable amount for the water.
- Sydney Water does not support any changes to the Water Supply Agreement or the removal of the nil price for desalinated water outside the operating rules.
- Sydney Water accepts in principle that testing costs should be borne by all water customers. However, as SDP will required to conduct recommissioning testing following storm damage repair we do not agree that they should be provided for in the 2017 pricing determination.
- Calculating abatement monthly allows SDP to manage natural variations in output. The abatement mechanism multiplier should not exceed 1.

SDP's prices are not set through 'cost of service' regulation. The TOR clearly set out that the price determination should give SDP the *opportunity* to earn the revenue to meet its costs but not a *guarantee* that it will do so. SDP will recover these cost if it operates efficiently. Well designed mechanisms should provide financial incentives to SDP to perform efficiently. IPART has designed mechanisms that incentivise SDP to maximise production during drought and disincentives for operation outside of water security. We believe that SDP should also be incentivised to reduce costs, maximise availability, and minimise losses on the resale of electricity and LGCs. Well designed mechanisms should be implemented that provide the correct financial incentives to SDP to perform in any new operating environment.

6.1 Efficiency Adjustment Mechanism

The intention of the efficiency adjustment mechanism is to incentivise SDP to reduce costs. SDP should not be rewarded for cost reduction that arises from changing between operating modes.

However where SDP claims an efficiency saving, and IPART is satisfied that this does not relate to a change in operating modes, SDP should be entitled to retain the efficiency saving for the holding period. The current efficiency adjustment mechanism will not provide the incentive necessary for SDP to deliver savings. SDP's proposal for the efficiency adjustment mechanism is not unreasonable in theory, however in practice this could mean a holding period could span over decades and could reduce the incentive to look for efficiencies given the long waiting period. In addition, we are not sure whether it could be implemented as it would bind future determinations. We have suggested an alternative efficiency mechanism approach in Box 6-1

Box 6-1 An alternative efficiency mechanism

An alternative approach could be to allow SDP to 'hold' onto efficiency gains in the subsequent regulatory period regardless of the operating mode of the plant. For example, a $1 efficiency is realised in the first year of a regulatory period while the plant is in full production mode. The $1 efficiency was wholly achieved from the operating costs associated with running the plant in full production. At the end of the first year, dam storages reach beyond 80 per cent and the plant is switched to security mode for years two to five of the regulatory period. Therefore SDP were only able to hold onto the $1 efficiency for the one year that it was made. In the next regulatory period the plant is forecast to remain in security mode. Realising that SPD only retained the $1 efficiency for one year, IPART allow SDP to recover an additional $1 for the first four years of the next regulatory period, ensuring that SDP can hold onto efficiencies for a total of five years and are not disincentivised by the plant changing operating modes. See this example explained in Table 6-1.

Table 6-1 Alternative proposal for Efficiency Adjustment Mechanism

	Period one					Period two				
Operating mode	On	Off	Off	Off	Off	Off	Off	Off	Off	Off
Allowable revenue	100	70	70	70	70	71	71	71	71	70
Actual cost	99	70	70	70	70	70	70	70	70	70
Efficiency made	1	0	0	0	0	0	0	0	0	0
Efficiencies held	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**

6.2 Our response to IPART's questions

11. Is there a need to refine our regulatory settings to better align SDP's incentives to fulfil its water security role? In particular, should SDP be able to:

- **Operate at less than full capacity without penalty when ramping up production to fulfil its water security role ('soft' restart mode)?**
- **Sell drinking water to Sydney Water when transitioning to a shutdown mode after a period of operation fulfilling its water security role ('soft' shutdown mode)?**
- **Operate for a minimum run time when it is called into operation to fulfil its water security role?**

Sydney Water is required to accept water from SDP under the Water Supply Agreement which means it must accept water supplied by SDP even if it is at a higher price than other water sources. The 2012 Determination set a nil water usage charge for water supplied to Sydney Water when dam levels are high to discourage SDP supplying water to Sydney Water other than when required in fulfilling its water security role. This was also one of a number of measures to encourage SDP to seek third party customers as SDP may continue producing water, and selling to third parties, when dam levels are high. Sydney Water does not support the removal of the nil price for water supplied to Sydney Water outside the 70/80 operating rules. Removing the nil price for supply of drinking water to Sydney Water outside the 70/80 rule is likely to decrease the incentive for SDP to seek other third party customers. The nil price for water supplied to Sydney Water outside the 70/80 operating rules also provides a beneficial social impact for Sydney Water's customers because Sydney Water's customers are not obliged to pay for water delivered to Sydney Water at unnecessarily high prices.

While Sydney Water sees value to our customers of a 'soft' restart mode being included in the operating rules, there may be network and water quality issues for Sydney Water if we accepted desalinated water at very low volumes. We should therefore not be forced to take this water during a 'soft' restart. We believe that where we accept the water, it would be appropriate for us to pay the equivalent of the regulated charge.

If a minimum run time, with a short duration, were implemented as part of the operating rules it could provide confidence that the drought has broken before shutting down the plant and avoiding unnecessary transition costs. However, it could result in Sydney Water accepting desalinated water while dam are spilling. Likewise a 'soft' shutdown mode may force Sydney Water customers to pay for expensive desalinated water when it is not required. This could incentivise inefficient operation of the plant. Refer to Appendix 1 for further details.

12. Is there a need to refine our regulatory settings to accommodate greater operating flexibility outside of SDP's water security role (i.e., when dam levels are high)?
- **In particular, should SDP be able to sell drinking water to Sydney Water upon request (i.e., should we remove the nil price for any water supplied to Sydney Water when dam levels are high)?**

Sydney Water may only request water from SDP outside the 70/80 operating rules under a very limited set of circumstances contemplated in the Water Supply Agreement. Sydney Water cannot request water except to mitigate the effect of a public health incident (which means a circumstance whether there is a potential or immediate threat to public health) or to ensure security of supply or network stability during periods of outages, unavailability or maintenance on any water industry infrastructure in Sydney Water's area of operations. The delivery of desalinated water is conditional on, among other things, an arrangement being made to reimburse SDP for reasonable costs incurred.

It could be argued that these reasonable cost would be the same as the regulated prices set by IPART. Sydney Water would be prepared to pay the regulated price under the limited set of circumstances contemplated in the Water Supply Agreement for supplying water outside the 70/80 operating rules. However, Sydney Water does not support changes to the Water Supply Agreement or the removal of the nil price for water supplied to Sydney Water beyond this outside the 70/80 rule. The nil price discourages SDP from supplying water to Sydney Water other than when required for water security and is one of a number of important incentives to encourage SDP to seek third party customers. SDP remains free to produce water and charge a third party customer for water outside the 70/80 operating rules.

There is also a risk that a change to the Water Supply Agreement may require Sydney Water to re-assess the substance of the agreement and determine the appropriate accounting treatment for the Water Supply Agreement. A change to the Water Supply Agreement may result in Sydney Water having to recognise the Water Supply Agreement with SDP as a lease which in turn could have a significant adverse impact on Sydney Water's credit rating and cost of debt and lead to a social impact by increasing costs to Sydney Water's customers.

13. Could greater operating flexibility outside of SDP's water security role provide system-wide benefits by lowering Sydney Water's costs or improving its service standards, ultimately benefiting Sydney Water's retail customers?

As noted above, Sydney Water would be prepared to pay the regulated price under the limited set of circumstances contemplated in the Water Supply Agreement. However, Sydney Water does not support changes to the Water Supply Agreement or the removal of the nil price for water beyond this. Sydney Water would be required to pay WaterNSW compensation if sourcing water from SDP resulted in a revenue shortfall for WaterNSW. Sourcing from SDP could therefore be significantly more expensive. Sydney Water does not support unregulated prices due to the increased risk Sydney Water would not be able to recover the additional cost from our customers.

14. Are there any impediments to SDP and Sydney Water operating more flexibly and efficiently outside of SDP's water security role?

The Terms of Reference set by the Minister for Finance and Services in 2012 are a potential constraint on greater operating flexibility outside of SDP's water security role, as they are based on an assumption that SDP will either be supplying water at or close to full output or in shutdown mode. In particular, a change to allow more operating flexibility outside the operating rules may undermine the financial indifference principle. This is because the energy adjustment mechanism does not operate when the plant is producing water.

15. Are there any other circumstances when SDP should have operating flexibility?

SDP has operating flexibility to provide water outside the operating rules at any time to third parties and to Sydney Water under exceptional circumstances. We do not support any changes to the Water Supply Agreement. There is a risk that changes to the Water Supply Agreement may require Sydney Water to reassess the accounting treatment for the Water Supply Agreement,

including recognising the agreement with SDP as a lease on our balance sheet. This could have a significant adverse impact our credit rating, our cost of debt and ultimately the social impact of an increase in costs to our customers.

This flexibility must consider how SDP's financial indifference can be maintained, particularly where the volume of water supplied is less than the full output of the plant as the energy adjustment mechanism does not operate when the plant is producing water. Sydney Water's customers should not incur any additional costs resulting from where this increased flexibility supplies third party customers.

16. **Is there a case to allow periodic partial testing of the plant when in extended shutdown to improve SDP's availability and reliability as a drought response measure? If so, what are the appropriate protocols for operating the plant in this capacity, such as the technically prudent:**
    - **frequency and duration of the testing period, and**
    - **volumes of drinking water produced during a testing period?**

The desalination plant is a key water security measure for Sydney, and it must be available to fulfil this role when required. However, the existing arrangements may not deal adequately with shutdown periods that are longer than 5 years. Some modification may be appropriate during these extended shutdown periods, such as additional testing. This testing would be warranted where it reduces the future costs for restart. While we accept in principle that testing costs should be borne by all water customers, we do not agree that they should be provided for in the 2017 pricing determination. Sydney Water also does not support any changes to the Water Supply Agreement to facilitate testing.

SDP will be required to recommission the plant following repairs for storm damage and this testing should be considered a cost of the repairs. It would therefore not be fair to end customers to include additional costs of testing to prove the capability of the plant during the next determination period as this would duplicate testing done due to storm damages. We note that SDP's proposal for testing has been deemed confidential making it impossible for us comment further.

17. **An abatement mechanism applies to SDP's fixed charges if it produces volumes of water less than the plant's full production capacity when it is fulfilling its water security role.**
    - **Are there current aspects of the abatement mechanism that need modifying?**
    - **Is this financial incentive still relevant or are there other performance mechanisms that could better ensure SDP maximises supply when required?**

We recognise that the current abatement regime can create a perverse incentive for SDP. As payments will be abated until it reaches full production, the current settings create an incentive to 'dump' water until full production is reached.

In question 11 we outline our support for a soft start mechanism, though noting there may be network and water quality issues for Sydney Water if we accepted desalinated water at very low volumes. We should therefore not be forced to take this water during a 'soft' restart. We believe that where we accept the water, it would be appropriate for us to pay the equivalent of the regulated charge. This may require amendments to the abatement mechanism.

The abatement mechanism provides a financial incentive for SDP to maximise production when responding to drought. As stated by IPART, the output of the plant may fall shy of the nominal capacity of 250 ML per day or produce excess volumes up to the technical maximum of the plant. A monthly calculation period would present SDP with the opportunity to manage these natural variations. For clarity, however, the mechanism should only apply to production short-falls (i.e. the abatement multiplier should not exceed 1 for any month).

7 Setting SDP's revenue requirement

Key messages

- Our analysis indicates that SDP's headline reduction per customer per year in water security mode is closer to $17.80, rather than the $24 as stated by SDP. The $17.80 reduction per customer is mainly from a reduction of $22.70 in the forecast Regulatory Asset Base (RAB) value and applicable Weighted Average Cost of Capital (WACC), offset by mainly an increase in opex and higher depreciation due to a shorter pipeline asset life as proposed by SDP.
- Our analysis indicates that when including the one off transition charges, network charges, and the cost of the energy adjustment mechanism, the per customer charge is closer to an increase of $2.10 per customer per year.
- The higher degree of uncertainty around the operation of the desalination plant would indicate that a shorter determination period, for example two years, may be more appropriate at the current time.
- Allowing only efficient costs to be passed through into SDP's prices is in the long-term interest of Sydney Water's customers. Determining what the efficient costs are is a matter for IPART's expenditure consultant.
- Sydney Water does not support the pass-through of any additional costs resulting from storm damage nor do we support the introduction of a new non-operational mode.
- Sydney Water agrees with SDP that their efficient costs do not reduce when the plant is non-operational. Sydney Water believes that when the plant is inoperable (and therefore incapable of providing the services set out above) a nil charge should apply. SDP should procure, and be entitled to recover the cost of, appropriate insurance premiums to mitigate this risk.
- Sydney Water agrees that cost pass-through mechanisms should only be applied in exceptional circumstances. Implementing the energy adjustment mechanism as a cost pass-through does not meet the criteria set out by IPART as SDP can meaningfully influence the costs incurred.
- We do not see a strong need to reconsider asset classes and lives.
- We believe there may be a case for the pass-through of costs SDP may incur when restarting the plant, given the length of shut down. We believe that a cost pass-through of the capitalisation of the efficient costs is more appropriate including an allowance for membrane replacement in the restart charge as proposed by SDP.

7.1 Comparison of Annual Revenue Requirement

SDP has stated in their pricing proposal that their revenue requirement per customer per year is reducing by $23 in water security shutdown and $24 dollar in full operation mode. It is difficult to assess this as parts of SDP's proposed revenue requirements are redacted. However, Sydney Water has sought to assess these headline claims against the customer bill impact that we have calculated based on SDP's pricing proposal.

Box 7-1 Comparison of total ARR – Prices in 2016-17 vs SDP's 2017 Proposal

	Water Security (fixed charge)*	Full Operation*	Usage*** & incremental service charge (Full Operation)
Total of 5 years ($2016-17 million)			
2017 SDP's proposal	818.6	1,178.2	359.5
2012 SDP Determination**	970.7	1,347.2	376.5
Variance	-152.0	-169.0	-17.0
2016-17 / Average of SDP proposals ($2016-17 million)			
2017 SDP's proposal	163.7	235.6	71.9
2012 SDP Determination**	194.1	269.4	75.3
Variance	-30.4	-33.8	-3.4
Adjustment - SDP's price structure***	-3.4		3.4
Adjusted variance	-33.8		0.0

Note
* This excludes transitional charges, electricity network charges and gain/loss in surplus energy adjustments
** Calculation is based on the applicable prices in financial year 2016-17
*** SDP proposed no charge to its usage charge, thus any incremental cost difference is assumed to have been included in its fixed charge.

From our analysis above, it shows that SDP proposes a decrease of $34 million in the annual revenue requirement in water security shutdown. This would result in approximately $17.80 bill reduction per customer per year. The movement in the bill reduction are from:

- Regulatory Asset Base value for assets reducing by, on average $146 million, contributing an expected reduction of approximately $5.20 in charges per customer per year
- reduction in Weighted Average Cost of Capital, including changes from pre to post tax framework, contributing an expected reduction of approximately $17.50 in charges per customer per year

- changes in OPEX to cover various additional cost increase (maintenance, chemicals, corporate costs), contributing an increase of approximately $4.90 in charges per customer per year
- increase in depreciation due to shorter pipeline asset life, contributing an increase of approximately $1.40 in charges per customer per year
- allocation of costs to incremental fixed charges etc, contributing a decrease of approximately $1.40 per customer per year

Our analysis indicates that SDP's headline reduction of $24 in full operation mode excludes transition charges, network charges, and the cost of the energy adjustment mechanism. We have assessed the impact on customers' bills to be:

- increase in (one off) transition charge of $31 million (assumed to be costs for membrane replacement, restart energy and water for pipeline flushing), contributing an increase of approximately $16.30 in charges per customer per year
- customer share of losses from resale of surplus electricity and LGCs estimated to be $6.8 million yearly (SDP propose to pass-through $34 million over 5 years versus an absolute figure of $24.6 million), contributing to an increase of approximately $3.60 in charges per customer per year

Box 7-2 Overall incremental bill impact (when the plant is operating) per customer ($2016-17):

Fixed charge	-17.8 [1]
Transitional charge	16.3 [2]
Loss from surplus energy adjustment	3.6
Total net reduction (without one-off charge)	**-14.2**
Total net increase (with one-off charge)	**2.1**

Note
[1] The $22.7 bill reduction per customer is generated from the reduced value of RAB and lower WACC
[2] This is a one-off increase.

Once these costs are included, the impact is an increase of approximately $2.10 per customer per year.

7.2 Our response to IPART's questions

18. Should the length of SDP's determination period continue to be set for five years?

It is impossible to forecast Sydney's next severe drought and when SDP will next deliver desalinated water. SDP have been in shutdown for an extended period of time, the asset has been

affected by major storm damage, and the operating rules in the Metropolitan Water Plan are under review. This higher degree of uncertainty would indicate that a shorter determination period, for example two years, may be more appropriate at the current time. As a longer term goal, we see merit in better alignment between SDP and Sydney Water's price review cycles – for example, SDP price reviews could precede Sydney Water's by one to two years.

Allowing only efficient costs to be passed through into SDP's prices is in the long-term interest of Sydney Water's customers. Determining what the efficient costs are is a matter for IPART's expenditure consultant. The selection of reviewers with the requisite knowledge and experience is essential to ensure that the efficient costs can be accurately determined.

19. The revenue requirement represents SDP's total efficient costs of providing its monopoly services in each year of the determination period. SDP's costs, and thus its prices, vary depending on what operating mode it is in.
- **Should we continue using a 'building block' method to calculate SDP's revenue requirement?**
- **Should we continue to set mode-dependent notional revenue requirements?**
- **Should we continue to set a separate notional revenue requirement for SDP's pipeline?**

As for question 18.

20. SDP's pricing proposal is due on 24 October 2016 and will be made available at our website for stakeholder comment. Does SDP's proposed revenue requirement in each mode of operation represent efficient costs, taking into account its proposed:
- **operating and capital expenditure**
- **return on assets**
- **regulatory asset base**
- **regulatory depreciation and asset lives**
- **tax allowance, and**
- **return on working capital?**

SDP has stated in their pricing proposal that their revenue requirement per customer per year is reducing by $23 in water security shutdown and $24 dollar in full operation mode. It is difficult to assess this as parts of SDP's proposed revenue requirements are redacted. However, Sydney Water has sought to assess these headline claims against the customer bill impact that we have calculated based on SDP's pricing proposal. We believe that the SDP's proposed fixed charges will result in a decrease of $17.80 per customer per year in water security shutdown and an increase of $2.10 per customer per year in full operation. See Chapter 7.1 for further details.

As stated previously, allowing only efficient costs is in the long-term interest of Sydney Water's customers. Determining what the efficient costs are is a matter for IPART's expenditure consultant. The selection of reviewers with the requisite knowledge and experience is essential to ensure that the efficient costs can be accurately determined and customers do not bear excessive costs through their Sydney Water bills.

21. What scope is there for SDP to achieve efficiency gains over the 2017 determination period?

This is a matter for IPART's expenditure consultant.

22. The desalination plant sustained significant damage from a storm event on 16 December 2015. Since that time, the plant has been unable to operate (not capable of providing non-rainfall dependent drinking water).

- **What are the implications of this storm event on SDP's efficient costs?**
- **Should we establish a new revenue requirement (and pricing mode) to account for when the plant is inoperable?**
- **Who should bear the SDP's costs if the plant is inoperable?**

SDP provides two services; making the desalination plant available and supplying desalinated water. IPART is required to set prices for these two services. When non-operational SDP cannot provide either of its services. It is not a new service for which IPART can set at price. SDP has not been able to provide either service since the storm event and Sydney Water's customers have continued to bear the full cost of the base water security charge. This is because the abatement regime only applies during operating modes.

Sydney Water does not think it appropriate that its customers should pay SDP's fixed charges in these circumstances. Sydney Water believes that when the plant is inoperable (and therefore incapable of providing the services set out above) a nil charge should apply. SDP should procure, and be entitled to recover the cost of, appropriate insurance premiums to mitigate this risk.

A condition of SDP's licence is that they operate the plant in accordance with Good Industry Practice which includes SDP having adequate insurance in place, including business interruption insurance. The cost of these insurance premiums should be included in SDP's revenue requirement.

IPART has previously rejected the contention that a business should either be compensated for holding business specific risk or that these risks should be necessarily passed on to customers[9]. While SDP cannot control the weather they can control the cost of the storm damage through their level of insurance. SDP's proposal for storm damage costs to be passed through should likewise be rejected. We note that SDP's response to this question has been deemed confidential making it impossible for further comment on their proposal.

23. What are SDP's efficient energy costs for the 2017 determination period?

SDP's energy contract prices are deemed efficient during shutdown due to the operation of the energy adjustment mechanism. IPART has stated that energy supply contracts can be subject to renegotiation however to do this SDP would need to pay compensation to their energy supplier for any lost revenue and would incur additional legal costs. The 20 year energy supply agreements underwrite long life assets and fulfil the requirement set by government that the plant be supplied by 100 per cent renewable energy. The contracts were secured following a competitive tender. We believe that the contract costs represent efficient energy costs for SDP that should not be assessed at each price review.

24. Should we continue to pass through into prices SDP's fixed and variable network charges (as determined annually by the Australian Energy Regulator)?

Any forecast of network charges during the previous price review for SDP would have been significantly higher than the actual billed charges. The unpredictability of network charges means that no forecast would be more efficient than a pass-through of actual charges. We welcome IPART's proposal to continue this approach.

25. We consider that cost pass-through mechanisms should only be applied in exceptional circumstances and have outlined criteria to determine where cost pass-through mechanisms should apply.

- **Is there a case to manage any other of SDP's proposed costs through a cost pass-through mechanism?**

Sydney Water agrees that cost pass-through mechanisms should only be applied in exceptional circumstances. IPART's proposal for implementing the energy adjustment mechanism will be a cost pass-through. We do not believe that SDP has no ability to influence the quantum of the energy adjustment costs incurred, and therefore should not qualify as a cost pass through.

While SDP cannot control the weather they can control the cost of the storm damage through their level of insurance. We reject SDP's proposal for the pass-through of costs of storm related damage. SDP is a single asset company and the availability of their asset is a business specific risk. IPART has previously rejected the contention that a business should either be compensated for holding this risk or pass this risk on to customers[6]. We note that SDP's response to this question has been deemed confidential making it impossible for further comment on their proposal.

We believe however that there may be a case for the pass-through of costs SDP may incur when restarted. SDP has been in an extended shutdown since its proving period in 2012. At the start of the next determination period the shutdown will have extended for 5 years and there is significant uncertainty regarding the costs SDP will incur in replacing membranes if it were called to start. We believe that a cost pass-through of the capitalisation of the efficient costs is more appropriate than including an allowance for membrane replacement in the restart charge as proposed by SDP. If IPART does not favour a shorter determination period then a cost pass-through mechanism for the efficient additional costs SDP incurs during a restart may be appropriate.

26. Is there a case to reconsider the asset classes established in the 2012 review?

There does not appear to be any strong driver to reconsider the asset classes established in the 2012 review. IPART has provided no analysis or a preliminary view. SDP proposed the current asset classes and lives which were accepted by IPART following consultant's advice that they were appropriate. We do not see a strong need to reconsider asset classes.

[6] *IPART, Review of prices for Sydney Water Corporation, Water – Issues Paper, September 2015, page 95*

27. Is there a case to review SDP's asset lives as a result of the damage to the plant caused by the recent storm event?

There does not appear to be any strong driver to reconsider the asset lives as a result of the damage to the plant caused by the recent storm. Repairs of storm damage will not alter the useful life of the plant. The replacement of assets through insurance remedial work or as a result of the long shutdown should be consistent with accounting standards. IPART has provided no analysis or a preliminary view. We do not see a strong need to reconsider asset lives.

8 Energy and efficiency adjustment mechanisms

Key messages

- The energy and efficiency adjustment mechanisms should incentivise desired behaviour from SDP, however due to its complexity SDP is unlikely to claim efficiency savings.
- If SDP actively manage the resale of their electricity, it is clear that the benefits to customers significantly outweigh any risks or additional cost incurred by SDP.
- The intention of the efficiency adjustment mechanism is to incentivise SDP to reduce costs. SDP should not be rewarded for cost reduction simply for changing between operating modes.
- An alternative approach to SDP's proposed changes to the efficiency adjustment mechanism could be to allow SDP to 'hold' onto efficiency gains in the subsequent regulatory period regardless of the operating mode of the plant. This would reduce the potential for lengthy time periods between achieving efficiencies and realising the five year holding benefit.

8.1 Minimising customers' exposure to losses

The energy and efficiency adjustment mechanisms should incentivise desired behaviour from SDP. The energy adjustment mechanism should incentivise SDP to minimise its exposure to losses on resale of electricity and LGCs however it is designed as a cost pass-through. The efficiency adjustment mechanism should incentivise SDP to identify efficiency measures that reduce costs however due to its complexity SDP is unlikely to claim efficiency savings. Both mechanisms are poorly designed and do not provide the correct incentive to SDP.

The Terms of Reference set by the Minister for Finance and Services in 2012 required a mechanism to adjust SDP's revenue to accommodate significant gains and losses associated with the sale of surplus electricity and LGCs. For electricity the mechanism should mirror the 'Calculation of Shortfall Adjustment' in SDP's electricity supply agreement. This presents SDP with two options for managing the resales of surplus electricity; sell the full surplus each half hour against the half hourly spot price, or reduce the surplus by selling part of the surplus as a block. These blocks can be sold as baseload or peak load blocks. A baseload profile is defined as the period from 00:00 hours Monday to 24:00 hours Sunday over the duration of the contract. A peak load profile is defined as the period from 07:00am hours to 10:00pm hours Monday to Friday (excluding Public holidays) over the duration of the contract. Peak load profile corresponds to the time of days that electricity demand is highest. The price for peak load contracts trade at a premium to baseload contracts. Selling the surplus electricity as a peak load profile will minimise SDP's exposure to losses.

SDP's management of the surplus electricity will significantly impact its exposure to losses. To illustrate this we have forecast the losses on electricity resales over the current determination

period. We have used SDP's actual monthly electricity consumption and actual market prices where available. For future periods we have assumed average electricity consumption and average market prices. SDP's surplus electricity has been forecast as 1,671,508 megawatt hours over the current price determination.

SDP can either manage this surplus electricity in an active or passive manner. Passive management would result in this surplus being settled against the half hourly spot price. We have assumed that when actively managing the surplus electricity SDP would sell the surplus on a quarterly basis as a peak load block. The peak load block would be 85 megawatts per quarter and has been priced at the average market price for peak load futures traded on the ASX in prior quarter. The resulting surplus being settled against the half hourly spot price.

Table 8-1 Electricity resale loss – passive versus active resale strategy[1]

Strategy	Sold as Block	Surplus Electricity	Gain / (Loss)
Passive	N/A	1,671,508 MWh	($28,932,062)
Active	1,607,775 MWh	66,119 MWh	($13,527,692)

SDP could however sell the available block at any price between the highest and lowest price available in the preceding quarter.

Table 8-2 Range of possible losses for active resale strategy[1]

Strategy	Sold as Block	Price Achieved	Gain / (Loss)
Active	1,607,775 MWh	Highest	($4,093,161)
Active	1,607,775 MWh	Lowest	($19,919,363)

[1] Sydney Water estimates of actual costs for the period 2012-17

Prices in the electricity contracts have a positive skew. The risk for SDP is weighted in favour of performing better than the average. It is clear that the benefits to customers significantly outweigh any risks or additional cost incurred by SDP in actively managing their resales of electricity.

8.2 Our response to IPARTs questions

28. Is our proposed implementation of the energy adjustment mechanism for the current price review appropriate?

IPART's proposal for calculating the shortfall adjustment for electricity is not appropriate. In the Terms of Reference the Minister for Finance and Services directed that the mechanism must mirror SDP's electricity supply agreement, with the 'market price' defined as the half-hourly spot price and/or the price of a contracted 'available block'. IPART's proposal to set the market price as

the monthly average spot price ignores the fact that SDP could have sold surplus electricity at a higher price. The market price should be the higher of the spot price or the price SDP has achieved for resales of electricity.

29. What aspects of the energy adjustment mechanism should be updated or amended for implementation at future price reviews?

SDP is obliged to minimise its exposure to losses on the resale of surplus energy and Large Generation Certificated (LGCs) however the 'manifest imprudence' measure is a particularly high test. It would be imprudent of SDP to not actively manage the resale of surplus electricity.

Sydney Water questions the value of Seed Advisory's LGC and Electricity Trading Review provided by SDP. The review compared SDP's performance against an unknown risk appetite and trading policy. It states that SDP is not actively engaged with the energy market however SDP should seek to gain the highest price possible for resales. We reject the conclusion that risks and costs would outweigh any benefit for water customers. We forecast the minimum reduction in the cost of resales at $9 million over the current determination.

The electricity market price against which allocation of gains and losses to customers is calculated should incentivise this. This can be achieved by removing the percentage thresholds and calculating the energy adjustment based on the difference between the contract price and average peak price for electricity contracts traded on the ASX each quarter. This would consistent with the Terms of Reference as the core band of gains and losses to be borne by SDP would be the difference between an active and passive strategy. This benchmark price could be achieved (or beaten) by SDP and would significantly reduce the size of the energy adjustment mechanism for Sydney Water's customers.

30. Is our proposed implementation of the efficiency adjustment mechanism for the current price review appropriate?

IPART's proposed implementation of the efficiency adjustment mechanism in consistent with the current methodology.

31. What aspects of the efficiency adjustment mechanism should be updated or amended for implementation at future price reviews?

The intention of the efficiency adjustment mechanism is to incentivise SDP to reduce costs. SDP should not be rewarded for cost reduction merely for changing between operating modes. However where SDP claims a permanent efficiency saving, and IPART is satisfied that this does not relate to a change in operating modes, SDP should be entitled to retain the efficiency saving for the holding period. The current efficiency adjustment mechanism will not provide the incentive necessary for SDP to deliver savings. SDP's proposal for the efficiency adjustment mechanism is not unreasonable in theory, however in practice this could mean a holding period could span over decades and could reduce the incentive to look for efficiencies given the long waiting period between realising and holding efficiencies. In addition, we are not sure whether it could be implemented as it would bind future determinations.

An alternative approach could be to allow SDP to 'hold' onto efficiency gains in the subsequent regulatory period regardless of the operating mode of the plant. This would reduce the potential for lengthy time periods between achieving efficiencies and realising the five year holding benefit. Conceptually, it would also simplify the mechanism from a regulatory perspective if the efficiency was realised and held within two regulatory periods. See Chapter 6.1 for a simplified example.

32. Should we extend the efficiency carryover mechanism that we introduced for Sydney Water, Hunter Water and WaterNSW to SDP?

Sydney Water agrees that efficiency losses should never be passed through to customers. Extending our efficiency carryover mechanism to SDP would remove the possibility of this however we note that SDP considers that this will add additional complexity. SDP has proposed an alternative efficiency adjustment mechanism. We have suggested a possible refinement that would provide an incentive to SDP to look for efficiencies without binding future determinations.

Appendix 1 – Confidential

Appendix 2 – Confidential