



## SDP Revised Regulatory Proposal to IPART

Review of prices for Sydney Desalination Plant Pty Ltd

From 1 July 2017

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SDP Revised Regulatory Proposal to IPART

**Sydney Desalination Plant Pty Limited**

ACN 125 935 177

Suite 19, Level 17

Australia Square

264 George Street

Sydney NSW 2000

Phone: +61 2 8599 8534

Website: [www.sydneydesal.com.au](http://www.sydneydesal.com.au)

Enquiries about this report should be directed to:

**Lisa Welsh**

Executive Manager Regulatory and Commercial

Phone: +61 (2) 8599 8534

Email: [lisa.welsh@sydneydesal.com.au](mailto:lisa.welsh@sydneydesal.com.au)

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## Abbreviations

Term	Definition
ACT	Australian Competition Tribunal
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
ARR	Annual Revenue Requirement
BI	Business Interruption
CIP	Clean In Place
CPI	Consumer Price Index
DWPS	Drinking Water Pumping Station
ECM	Efficiency Carryover Mechanism
EfAM	Efficiency Adjustment Mechanism
EnAM/EAM	Energy Adjustment Mechanism
ESA	Energy Supply Agreement
ESS	Energy Saving Scheme
HWC	Hunter Water Corporation
INR	Infrastructure and Natural Resources Group
IPART	Independent Pricing and Regulatory Tribunal of NSW
ISR	Industrial Special Risks
LGC	Large-Scale Generation Certificate
LRET	Large-scale Renewable Energy Target
LRMC	Long Run Marginal Cost
MWD	Metropolitan Water Directorate
MWP	Metropolitan Water Plan
NEM	National Electricity Market
NER	National Electricity Rules
NPV	Net Present Value
O&M	Operation and Maintenance
OTPP	Ontario Teachers' Pension Plan Board
RAB	Regulated Asset Base
RBA	Reserve Bank of Australia
REC	Renewable Energy Certificate
RO	Reverse Osmosis
ROC	Retail Operating Costs



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Term	Definition
ROM	Retail Operating Margin
RSA	REC Supply Agreement
SDP	Sydney Desalination Plant
STC	Small-Scale Technology Certificates
SWC	Sydney Water Corporation
TIF	The Infrastructure Fund
TOR	Terms of Reference
UTA	Utilities Trust of Australia
Veolia	Veolia Water Australia
WACC	Weighted Average Cost of Capital
WIC Act	Water Industry Competition Act 2006
WSA	Water Supply Agreement
WUC	Water Usage Charge

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## Overview

The Sydney Desalination Plant (**SDP**) plays a key role in securing Sydney's water supply by providing both a water security service to ensure Sydney has sufficient high quality drinking water during drought or other water scarcity conditions — as well as a long-term water supply service that assists in protecting river health and meeting future demand from population growth.

We have developed a submission and revised proposal (**revised proposal**) to the Independent Pricing and Regulatory Tribunal of NSW (**IPART**) for the period 1 July 2017 to 30 June 2022 (the 2017-22 regulatory period). This proposal sets out the revenues required to operate and maintain the SDP and the incentive and risk management framework and tariff structures necessary during the 2017-22 regulatory period to:

- Meet the Standing Terms of Reference (**TOR**)<sup>1</sup>
- Ensure the SDP can effectively fulfil its water supply and water security services under the Metropolitan Water Plan (**MWP**) as well as our obligations to Sydney Water Corporation (**SWC**) under the Water Supply Agreement (**WSA**)
- Promote the long-term interests of our customers, including SWC and end-use water customers.

To develop this revised proposal we reviewed IPART's draft report,<sup>2</sup> determination<sup>3</sup> and methodology paper<sup>4</sup> (draft decision)—including both the overall and the constituent decisions—and analysed the material changes that have occurred in the policy, regulatory and commercial operating environments subsequent to our proposal being submitted to IPART in October 2016 (**October 2016 proposal**). We then re-engaged with SWC and other stakeholders to discuss their priorities and preferences in relation to our services over the 2017-22 regulatory period and sought expert advice to assist us in forming a view on the extent to which the draft decision meets the TOR and promotes the long-term interests of our customers, including SWC and end-use water customers.

We welcome the draft decision's recognition of the importance of ensuring that SDP's incentives align with those of our customers, including SWC and end-use water customers. For this reason, we agree with the continuation of an abatement mechanism that provides SDP with strong financial incentives to operate at full capacity when called upon, and agree with many of the draft decision's amendments to the mechanism. We also agree with many aspects of the draft decision on forecast expenditure and other 'building block' components.

However, we are concerned that the draft decision rejects aspects of our October 2016 proposal, including the forecast energy costs and aspects of the proposed incentive and risk management framework necessary in each operating mode. We consider there to be opportunities to modify aspects of the draft decision to ensure it meets the TOR and promotes the long-term interests of our customers.

Despite having some concerns with a number of elements of the draft decision – including the scope of services subject to regulation and cost sharing framework— we have accepted the draft decision on these issues for the purposes of our revised proposal given they are unlikely to be material issues over the 2017-22 regulatory period. However, these elements of the regulatory framework should be reconsidered in future periods to ensure they are not barriers to competition emerging in the market.

<sup>1</sup> The Government has issued a standing Terms of Reference to IPART in respect of regulation of SDP.

<sup>2</sup> IPART, *Sydney Desalination Plant Pty Ltd Review of Prices from 1 July 2017 to June 2022*, Draft Report March 2017.

<sup>3</sup> IPART, *Prices for Sydney Desalination Plant Pty Ltd's Water Supply Services 1 July 2017 to 30 June 2022*, Draft Determination March 2017.

<sup>4</sup> IPART, *Sydney Desalination Plant Pty Ltd Energy Adjustment and Efficiency Carryover Mechanisms*, March 2017.

The revised proposal also responds to the latest operating conditions for SDP, contained in the NSW Government's *2017 Metropolitan Water Plan* (MWP). The new MWP will introduce new rules governing the drought operations for the plant, including:

- A lower drought response 'on' trigger when Sydney's combined water storages fall to 60%, and a new 'off' trigger when storage levels rise to 70%;
- A minimum run time of 14 months (including 8 month restart) for each drought episode; and
- The ability for NSW Government to introduce short term triggers for supply and drought response measures.

As a result of these changes to the 2017 MWP (and in particular the revised 60% trigger level) it is expected that SDP will be in drought security mode more frequently than under the current rules. In addition, there is now increased uncertainty in the short to medium term operating horizon given the ability for the NSW Government to call upon SDP if needed.

The amendments in the 2017 MWP to lower SDP's 'on' trigger to 60%, along with recent inflows to storages, means that it is unlikely that SDP will be called into operation during the 2017-22 regulatory period. However, it is critical that IPART's 2017 Determination ensures that SDP is provided with incentives to effectively fulfil its water supply and water security services for the long-term benefit of our customers. This requires the notional revenue requirement for the restart and full operation modes to reflect the efficient costs of transitioning into full operation mode and the higher ongoing costs of producing desalinated water should SDP be called upon to provide water. It also requires mechanisms to address the inherent uncertainty in our sphere of environment—such as the potential for further changes in our operating environment and regulatory obligations resulting in a change to the prudent and efficient costs of providing services.

This revised proposal sets out:

- The revenues required to operate and maintain the SDP and the incentive and risk management framework and tariff structures necessary during the 2017-22 regulatory period to meet the TOR and promotes the long-term interests of our customers, including SWC and end-use water customers
- Where aspects of our October 2016 proposal have been:
  - Maintained, including where the draft decision has accepted aspects of our October 2016 proposal as being consistent with the TOR and our customers' long-term interests, or where we do not agree with the draft decision and maintain that our October 2016 proposal meets the TOR and promotes the long-term interests of our customers.
  - Updated, including where material changes have occurred in the policy, regulatory and commercial operating environments, or where the draft decision has not accepted aspects of our October 2016 proposal but where we have adopted the IPART's position for the purposes of this revised proposal.
- The implications of this revised proposal for our customers, including SWC and end-use water customers.
- Further information for IPART in response to the draft decision.

## Lowering water bills

Our proposal includes a 19.6% decrease in the revenue to be recovered from customers in water security for the 2017-22 regulatory period compared to the approved revenue requirement for the 2012-17 regulatory period (excluding the impact of inflation), on a cost per customer basis.

This will deliver average annual savings of around \$21 per customer over the 2017-22 regulatory period or:

- 2.6% on a small residential end-customer water and wastewater bill (excluding the impact of inflation)
- 1.9% on a larger residential end-customer water and wastewater bill (excluding the impact of inflation)
- 1.5% on a small business end-customer water and wastewater bill (excluding the impact of inflation).

Figure OV.1 outlines the indicative impacts for a range of typical customers of our proposed charges in water security and full operation mode.

**Figure OV.1: Indicative customer impacts of our revised proposal (excluding inflation)**



Source: SDP Analysis

Note: These have been calculated relative to the allowed revenues for the 2012-17 regulatory period, on a cost per customer basis. SDP operating mode excludes the costs of restarting the SDP.

## Declining costs and notional revenue requirement

Our proposed notional revenue requirement for the plant and pipeline in water security mode for the 2017-22 regulatory period is \$866.26m (exclusive of network charges). This represents a decrease of 19.6% compared to the approved notional revenue requirement in water security mode for the 2012-17 regulatory period (excluding the impact of inflation), on a cost per customer basis. Table OV.1 shows that our proposed notional revenue requirement for the plant and pipeline in water security mode for the 2017-22 regulatory period is:

- \$13.54m more than our October 2016 proposal, reflecting an increase in the funding costs which is partially offset by reductions in forecast operating expenditure.
- \$18.66m more than the notional revenue requirement allowed for under the draft decision, reflecting a higher opening Regulatory Asset Base (RAB) value, slightly higher plant forecast operating expenditure and shorter pipeline asset lives.

**Table OV.1: Proposed notional revenue requirements for the plant and pipeline in water security mode for the 2017-22 regulatory period (\$2016-17, \$million)**

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
October 2016 proposal (\$m)	167.22	168.69	167.59	175.85	173.39	852.73
IPART draft decision	172.50	171.30	169.70	167.90	166.30	847.60
Revised proposal	175.84	174.75	173.22	172.24	170.22	866.26

Source: SDP calculations

Our proposed notional revenue requirement for the plant and pipeline in full operation mode for the 2017-22 regulatory period is \$1,184.55m (exclusive of restart and network charges). This represents a decrease of 18.6% compared to the approved notional revenue requirement in full operation mode for the 2012-17 regulatory period (excluding the impact of inflation), on a cost per customer basis.

Table OV.2 shows that our proposed notional revenue requirement for the plant and pipeline in full operation mode for the 2017-22 regulatory period is:

- \$27.52m less than our October 2016 proposal, reflecting an increase in funding costs which is offset by reductions in forecast operating expenditure, including energy costs.
- \$6.15m less than the notional revenue requirement allowed for under the draft decision reflecting materially lower forecast operating expenditure (primarily energy costs) which is partially offset by a higher opening Regulatory Asset Base (RAB) value and shorter pipeline asset lives.

**Table OV.2: Proposed notional revenue requirements for the plant and pipeline in full operation mode for the 2017-22 regulatory period, exclusive of restart charges (\$2016-17, \$million)**

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
October 2016 proposal (\$m)	244.75	243.58	242.31	241.38	240.05	1,212.07
IPART draft decision	242.90	240.40	237.70	235.40	234.20	1,190.70
Revised proposal	239.41	238.45	236.97	235.67	234.05	1,184.55

Source: SDP calculations

## Promoting the long-term interests of our customers

While we consider IPART's regulatory settings to be generally working well, our October 2016 proposal noted that some elements of the framework required refinement to ensure they are 'fit for purpose' over the 2017-22 regulatory period. We welcome IPART's careful consideration of our October 2016 proposal and its willingness to engage with stakeholders to date to ensure that the 2017 Determination facilitates SDP effectively fulfilling its water supply and water security services for the long-term benefit of our customers.

We have carefully considered the draft decision and the implications for the SDP and our customers, including SWC and end-use water customers. To assist our customers, stakeholders and IPART consider our revised proposal we have developed a 'traffic light' system that clearly and transparently highlights which aspects of the draft decision in our view are consistent with the TOR and our customers' long-term interests over the 2017-22 regulatory period, and based on this assessment, those aspects to which we have:

- Agreed - where the draft decision has accepted aspects of our October 2016 proposal as being consistent with the TOR and our customers' long-term interests, or where the draft decision has not

accepted aspects of our proposal but where we will adopt their position for the purposes of this revised proposal (***green light***)

- Partially agreed - where we are incorporating aspects of the draft decision into our revised proposal whilst maintaining aspects of our October 2016 proposal or proposing minor refinements (***amber light***)
- Disagreed – where we do not agree with the draft decision and maintain that our October 2016 proposal or revised proposal is consistent with the TOR and our customers' long-term interests (***red light***).







Our revised proposal strikes the right balance between our business and customer outcomes necessary to promote the long-term interests of our customers, including SWC and end-use water customers. It ensures we are provided with the opportunity to recover the revenues required to operate and maintain the SDP and an incentive and risk management framework and set of tariff structures necessary to meet the TOR and promotes the long-term interests of our customers, including SWC and end-use water customers.



Keith Davies

Chief Executive Officer

# 1. About this revised proposal

IPART sets maximum prices for SDP's declared monopoly services. IPART's 2012 Determination of prices for SDP's water supply services expires on 30 June 2017 and IPART is required to set maximum prices for SDP's declared monopoly services to apply from 1 July 2017 to 30 June 2022 (the 2017-22 regulatory period).

This document is SDP's revised regulatory proposal to IPART for the 2017-22 regulatory period. This revised proposal builds on and references material from our October 2016 proposal submitted to IPART. It incorporates, by reference, all supporting evidence and other material from our October 2016 proposal, unless otherwise stated, reflects, and maintains SDP's position as set out in the October 2016 proposal.

Alongside our October 2016 proposal, it also provides all the information we are required to submit to in compliance with the Standing Terms of Reference (**TOR**) and IPART's submission requirements<sup>5</sup>.

## 1.1 Approach used to develop this revised proposal

To develop this revised proposal, we first:

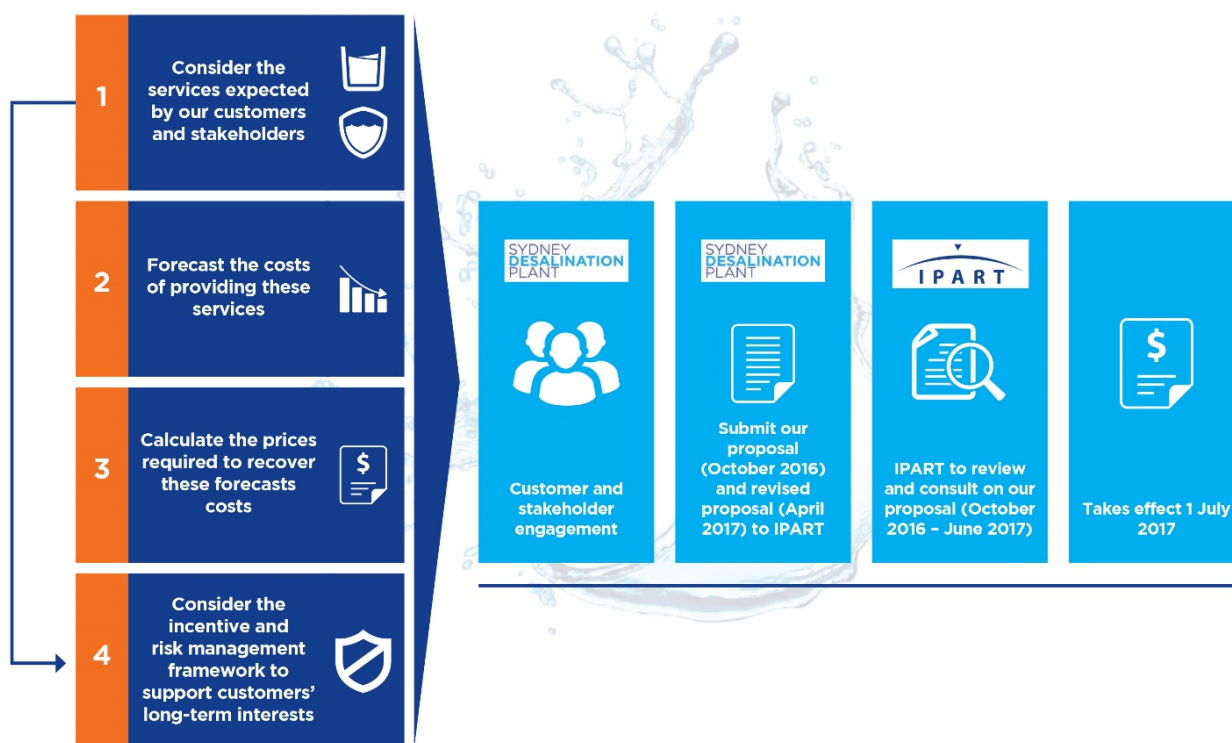
- Considered our October 2016 proposal—including the services expected by our customers and our stakeholders, the forecast costs of providing these services, the prices we need to charge SWC to recover these costs, and the incentive and risk management framework to support our customers' long-term interests (Figure 1.1)
- Analysed material changes that have occurred in the policy, regulatory and commercial operating environments subsequent to our proposal being submitted to IPART in October 2016 and the implications of these changes for us and our customers—including SWC and end-use water customers—over the 2017-22 regulatory period.
- Reviewed the draft decision —comprising both the overall decision on the notional revenue requirements (**NRR**) to be recovered from our customers, the constituent decisions<sup>6</sup> and the supporting material relied upon by IPART in making its draft decision<sup>7</sup>—and considered the extent to which the draft decision is consistent with the TOR and our customers' long-term interests
- Re-engaged with SWC as well as other stakeholders to discuss their priorities and preferences in relation to our service and safety standards, and our tariff structures over the 2017-22 regulatory period.
- Developed a 'traffic light' system to clearly highlight which aspects of the draft decision are consistent with the TOR and our customers' long-term interests

<sup>5</sup> IPART, Guidelines for Water Agency Pricing Submissions, 2015.

<sup>6</sup> Such as IPART, *Sydney Desalination Plant Pty Ltd Review of Prices from 1 July 2017 to June 2022: Draft Report*, March 2017; IPART, *Prices for Sydney Desalination Plant Pty Ltd's Water Supply Services 1 July 2017 to 30 June 2022*, March 2017; IPART, *Sydney Desalination Plant Pty Ltd Energy Adjustment and Efficiency Carryover Mechanisms*, March 2017

<sup>7</sup> Such as Atkins, *Sydney Desalination Plan – Expenditure Review: Draft Report*, December 2016.

Figure 1.1: Development of our revised proposal and the review process



Source: SDP

## 1.2 How to navigate this revised proposal

The remainder of this revised proposal is structured in line with the approach outlined in Section 1.1.

- Section 2 and 3 detail each of the main components of the proposed regulatory framework—including the proposed form of regulation, and incentive and risk management frameworks,
- Section 4 to 7 detail the proposed revenue requirements, and the underlying components including forecast operating expenditure, forecast capital expenditure, and proposed rate of return.
- Section 8 and 9 detail the proposed tariff structure, and proposed tariffs and the customer and financial impacts of our proposed prices.

Table 1.1 provides a more detailed overview of the structure and content of the proposal, and lists the key Appendices and supporting information for each section.

All amounts in this document are in \$2016-17 unless otherwise specified.

**Table 1.1: Structure of the proposal**

Section	Content	Supporting Appendices
1. About this revised proposal	<ul style="list-style-type: none"> <li>A description of this revised proposal</li> </ul>	<ul style="list-style-type: none"> <li>1-1: CEO's declaration of accuracy and consistency of data in the revised proposal</li> <li>1-2: Responses to IPART's draft decision</li> </ul>
2. Proposed changes to the form of regulation	<ul style="list-style-type: none"> <li>Proposed form of regulation to apply to our services including <ul style="list-style-type: none"> <li>Length of the determination period</li> <li>Mode based revenue requirements and pricing</li> <li>Scope of services subject to regulation</li> <li>Price control mechanism</li> <li>Reporting requirements</li> </ul> </li> </ul>	
3. Proposed changes to the incentive and risk management framework	<ul style="list-style-type: none"> <li>Proposed incentive and risk management framework to encourage service and cost improvements and to manage risks and uncertainties <ul style="list-style-type: none"> <li>Abatement mechanism</li> <li>Efficiency Carryover Mechanism (ECM)</li> <li>Pass through of electricity network charges</li> <li>Cost pass through mechanism for unforeseen and uncontrollable events</li> <li>Energy Adjustment Mechanism (EAM)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>3-1: Abatement Mechanism</li> <li>3-2: Seed Advisory – Costs and Risks of Energy Trading</li> </ul>
4. Revenue requirement for our water supply and security services	<ul style="list-style-type: none"> <li>Overview of proposed notional revenue requirement (or unsmoothed building block costs): <ul style="list-style-type: none"> <li>proposed return on and of capital (including opening capital base, forecast capital expenditure, rate of return and regulatory depreciation)</li> <li>operating and tax costs</li> </ul> </li> <li>Proposed target revenue (smoothed revenue requirement)</li> <li>Implied average price changes</li> </ul>	<ul style="list-style-type: none"> <li>4-1: Detailed breakdown of proposed revenue requirement by asset and modes</li> </ul>
5. Forecast operating expenditure	<ul style="list-style-type: none"> <li>Our forecast of operating expenditure including: <ul style="list-style-type: none"> <li>Operating and Maintenance (O&amp;M) costs</li> <li>Energy costs – unit costs and volume</li> <li>Corporate costs</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>5-1 Forecast operating expenditure by mode</li> <li>5-2: Aon 2017 Business Interruption Insurance Review (commercial in confidence)</li> <li>5-3: Insurable Risk Profile and Insurance Gap Analysis (commercial in confidence)</li> </ul>
6. Forecast capital expenditure	<ul style="list-style-type: none"> <li>Our forecast of capital expenditure</li> </ul>	





Section	Content	Supporting Appendices
7. Proposed allowance for return on assets, regulatory depreciation, tax obligations and other revenue	<ul style="list-style-type: none"> <li>• Rate of return</li> <li>• Regulatory Asset Base (RAB) roll-forward</li> <li>• Tax Asset Base roll-forward</li> <li>• Asset lives and depreciation method</li> <li>• Other revenue adjustments</li> </ul>	
8. Tariff structure and cost sharing	<ul style="list-style-type: none"> <li>• How we set our proposed prices, including tariff structures</li> <li>• How we will update our prices over the regulatory period</li> </ul>	
9. Customer and financial impacts of our proposed prices	<ul style="list-style-type: none"> <li>• Key outcomes of our proposed prices on: <ul style="list-style-type: none"> <li>– SWC and its residential and business customers</li> <li>– SDP financial performance</li> </ul> </li> </ul>	

### 1.3 Claims for confidentiality

In some circumstances the benefit of publishing some confidential information may be outweighed by the potential harm. For example, we may provide an estimate of the cost of procuring a service however if IPART were to publish this information it could impact our ability to undertake a competitive tender, and ultimately increase the costs to consumers. In a very limited number of cases, information has been provided to SDP by a third party on a commercial in confidence basis. To overcome this we have redacted small amounts of the information in this revised proposal as confidential.

## 2. Proposed form of regulation

**Table 2.1: Overview of our response to the draft decision on the form of regulation**

Our response to the draft decision on the form of regulation		
Length of the determination period	We agree that a five year determination period (from 1 July 2017 to June 2022) provides an appropriate balance between providing certainty to SDP (and its customers) and being responsible to changes in SDP's operating environment.	
Mode based revenue requirements and pricing	<p>We agree that mode based pricing—that establishes the efficient and prudent revenue requirements and prices required to operate in each mode—remains appropriate given that mode based pricing can reflect the varied operating characteristics and costs of operating, maintaining and investing in the SDP across different modes as envisaged under the 2017 Metropolitan Water Plan.</p> <p>We also agree that simplifying the number of modes for pricing purposes to water security (shutdown), restart and plant operation reflects SDP's default position to transition to water security after a period of operation.</p> <p>We accept the draft decision to adjust charges when the plant is inoperable during drought by strengthening the abatement mechanism. We agree that strengthening the abatement mechanism (rather than introducing a new inoperable mode) is a better-targeted and more proportionate way of ensuring that SDP's incentives reflect its drought response role. However, we have proposed a number of further refinements to better achieve the underlying objectives of the abatement mechanism (see Section 3.1).</p>	
Scope of services subject to regulation	<p>We accept the draft decision to regulate prices outside drought for all customers and to remove the nil charge for exceptional circumstances, for the purposes of our revised proposal, given they are unlikely to be material issues over the 2017-22 regulatory period. We note that this will enable us to provide a regulated service to SWC and end-use water customers in an eight-month restart, followed by full operation at design capacity.</p> <p>However, the scope of services subject to regulation should be reconsidered in future periods to ensure it does not create a barrier to competition emerging in the market.</p>	
Price control mechanism	<p>We accept that a price cap—that involves IPART setting the maximum price or cap for each component of our prices—remains an appropriate form of price control over the 2017-22 regulatory period.</p> <p>However, the pricing flexibility provided to SDP should be reconsidered in future periods to ensure it promotes the long-term interests of our customers, and does not create a barrier to competition emerging in the market.</p>	

The regulatory framework refers to the collection of rules that regulate the prices for the services we provide, to incentivise cost and service improvements and to share risks and uncertainties in our market.

The first step in determining the regulatory framework for SDP's services is to decide on the form of and broad approach to regulation. This includes matters such as the length of the determination period, the approach for calculating the revenue requirement over this period and the price control mechanism that determines how prices move over time.

In our view, IPART's 2017 Determination will positively affect the services that SDP provides and prices charged if it ensures that the form of regulation appropriately balances stability and predictability to minimise regulatory risk (and promote investment in long-lived assets and continued access to financing) yet are sufficiently flexible to be capable of efficiently responding to the inevitable uncertainties associated with SDP's operating framework and SDP's costs within this framework.

This section sets out our proposed form of regulation for the 2017-22 regulatory period. Section 3 sets out our proposed incentive framework and risk management framework.

## 2.1 Length of the determination period

The length of the determination period is a key element of the form of regulation.

IPART's 2012 Determination, adopted a 5-year determination period from 1 July 2012 to 30 June 2017 in accordance with the terms of reference for the review.

### 2.1.1 SDP October 2016 proposal

Our October 2016 proposal was consistent with IPART's preliminary view<sup>8</sup> that a five-year determination period (from 1 July 2017 to 30 June 2022) provides an appropriate balance between providing certainty to SDP<sup>9</sup> (and its customers) and being responsive to changes in SDP's operating environment.

### 2.1.2 IPART draft decision

The draft decision retains the five-year determination period consistent with IPART's preliminary view in its Issues Paper and our October 2016 proposal.

### 2.1.3 SDP revised proposal

Our revised proposal to retain a five-year determination period (from 1 July 2017 to 30 June 2022) is consistent with our October 2016 proposal and the draft decision.

## 2.2 Mode base revenue requirements and pricing

To provide SDP with a reasonable opportunity to recover efficiently and prudently incurred expenditure on the SDP plant and pipeline across its different operational modes, IPART's 2012 Determination calculated daily revenue requirements (using the building block approach) and a set of prices designed to enable SDP to recover these notional revenue requirements for each of the following operating modes:

- Full operation
- Transition to shutdown
- Short-term, medium-term, long-term and water security shutdown
- Transition to restart

The IPART Issues Paper suggested that there may be additional modes of operation for the 2017 Determination period. In particular, IPART sought views on whether a new pricing mode should be established for when the plant is inoperable, on the basis that the fixed costs incurred by SDP while the plant is inoperable may differ from those incurred while in water security shutdown.<sup>10</sup>

### 2.2.1 SDP October 2016 proposal

Our October 2016 proposal and November 2016 supplementary submission was consistent with IPART's preliminary view<sup>11</sup> to maintain mode-dependent revenue requirements and pricing, including maintaining a

<sup>8</sup> IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p51.

<sup>9</sup> Which also creates stronger incentives for regulated businesses to pursue efficiency improvements.

<sup>10</sup> IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p57.

<sup>11</sup> IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p54.



separate revenue requirement (and associated charge) for the pipeline that is not mode-dependent<sup>12</sup>, given that pipeline costs do not vary by mode of plant operation. Specifically, we proposed to:

- Retain the current modes for the plant<sup>13</sup>
- Not establish a new ‘inoperable’ mode for the plant as contemplated in IPART’s Issues Paper<sup>14</sup>, given that limiting the recovery of efficient costs when the plant is inoperable following a force majeure event creates unnecessary costs and risks<sup>15</sup> and is unlikely to positively affect the services the SDP provides over the 2017-22 regulatory period for the long-term benefit of customers.

### 2.2.2 IPART draft decision

The draft decision is to simplify SDP’s modes of operation for pricing purposes to the following – water security (shutdown), restart, and plant operation and not to establish a new ‘inoperable’ mode for the plant. In particular, the draft decision:

- Removed the intermediate shutdown modes in the 2012 Determination – i.e. short-term, medium-term and long-term shutdown
- Retained the definitions of plant operation and restart periods in the 2012 Determination (subject to clarifying changes and consequential changes following amendments to the definition of “Shutdown Period”)
- Redefined the shutdown period to begin from the 11<sup>th</sup> consecutive day of no production
- Maintained a separate revenue requirement (and associated charge) for the pipeline that is not mode-dependent, as this facilitates component pricing

In making the decision, IPART notes that many of SDP’s modes are not relevant to its primary objective to respond to drought or that their functions can be accommodated through appropriate changes to the regulatory framework, and as such, the water security (shutdown) mode should be SDP’s default or base operating mode.

### 2.2.3 SDP revised proposal

We agree that mode based pricing—that establishes the efficient and prudent revenue requirements and prices required to operate in each mode—remains appropriate given that mode based pricing can reflect the varied operating characteristics and costs of operating, maintaining and investing in the SDP across different modes as envisaged under the 2017 Metropolitan Water Plan.

We also agree that simplifying the number of modes for pricing purposes to water security (shutdown), restart and plant operation reflects SDP’s default position to transition to water security after a period of operation. Our revised proposal is consistent with the draft decision.

We also accept the draft decision to adjust charges when the plant is inoperable during a drought by strengthening the abatement mechanism rather than introducing a new inoperable mode. We agree that

<sup>12</sup> IPART noted that it would consider whether mode-dependent pricing should also apply to the pipeline. IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p54.

<sup>13</sup> As well as address some unintended interactions between the abatement mechanism and the definition of the modes for charging purposes.

<sup>14</sup> IPART noted that this pricing mode is to reflect the efficient fixed costs if the plant is inoperable. IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p58.

<sup>15</sup> For example, limiting the recovery of efficient costs when the plant is inoperable following a force majeure event and is likely to: create conflict between the 2017 Determination and the Stewardship Documents related to the lease of the SDP by the NSW Government, impose higher funding costs on SDP (and therefore prices on SWC and end-use water customers) as a result of a reallocation of force majeure risk from customers to SDP given that SDP would not be able to eliminate these ongoing risks either through commercial arrangements or regulatory arrangements, and create broader ongoing economic costs as a result of investor perceptions of sovereign risk.

strengthening the abatement mechanism is a more targeted and proportionate way of ensuring that SDP's incentives reflect its drought response role (see Section 3.1).

We also consider it would be beneficial to clarify the definition of a Restart period to ensure there is no ambiguity. The current definition states that a Restart period begins “*on the day of recommencement of the production of Desalinated Water...*” which might convey the impression that it starts when desalinated water is produced, rather than when the initial activities to restart the plant commence, which we understand is the intention.

We propose the following definition for Restart Period:

***Restart Period*** means a period:

(a) *beginning on the day of the recommencement of activities associated with preparing the Plant for the production of Desalinated Water (other than production of the kind referred to in paragraph (b) of the definition of “Shutdown” below) following a Shutdown Period; and*

(b) *ending on the day before the first day that Desalinated Water is produced by the Plant and supplied by SDP from the Plant to a customer after that Shutdown Period.*

SDP supports the decision to retain a separate revenue requirement and charge for the pipeline (see Section 8.4).

## 2.3 Scope of services subject to regulation

Under section 51 of the WIC Act, the Minister for Finance and Services has declared SDP to be a monopoly supplier in relation to the water supply services it provides under its network operator's and retail supplier's licences. Together, these licences authorise SDP (and our O&M contractor) to operate and maintain the desalination plant and pipeline to supply drinking water to any person (other than a small retail customer) within SWC's area of operations (as defined in the SWC Operating Licence).

However, the 2012 IPART Determination only permits SDP to charge SWC a variable charge for water supplied by SDP to SWC when the plant is operating in accordance with the 70/80 rule under SDP's Network Operator's Licence. Specifically, the 2012 Determination states that:

*The water usage charge leviable on SWC for any Desalinated Water supplied by SDP from the Plant to SWC at a time when available Storage:*

- *Is equal to or greater than 70%, and has not been less than 70% since it was last equal to or greater than 80%; or*
- *Is equal to or greater than 80%*

*shall be nil.*

As noted in IPART's Issues Paper, setting the water usage charge to nil when the plant supplies drinking water to SWC outside the 70/80 rule:

- Is intended to remove the financial incentive for SDP to supply drinking water that SWC is obliged to take (under its WSA) when dam levels are high<sup>16</sup>
- Creates no financial incentive for SDP to supply outside this rule, even when this would benefit both parties.<sup>17</sup>

<sup>16</sup> IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p 18.

<sup>17</sup> IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p45..

IPART's Issues Paper suggested that unregulated pricing agreements between SDP and its customers outside the 70/80 rule would:

- Allow them to negotiate the price of water usage charge and incremental fixed costs in their own self-interest, where SDP has limited monopoly power.<sup>18</sup>
- Recognise that as these are commercial negotiations – with SDP's customers likely to be large sophisticated customers with negotiation acumen – SDP and SWC (or other customers) would only enter into unregulated pricing agreements when all parties benefit (i.e. a 'win-win' agreement).

### 2.3.1 SDP October 2016 proposal

Our October 2016 proposal was to:

- Allow SDP to negotiate an agreed (unregulated) charge for water supplied outside of plant operation mode if SWC (or any other customer) initiates such a request. This recognises that there are a number of regulatory precedents for bilateral agreements of unregulated charges between parties with countervailing power. For example, IPART's recent decisions for SWC and HWC allowed greater price flexibility for these suppliers to enter into unregulated agreements with non-residential customers.
- Allow SDP to recover its variable costs (as determined by IPART) whenever SWC, or any other customer, requests water.

### 2.3.2 IPART draft decision

The draft decision is to:

- Continue regulating SDP's prices outside drought for all customers;
- Retain the nil price outside drought to Sydney Water, except in the exceptional circumstances specified in the Water Supply Agreement, which are to:
  - Mitigate the effects of a public health incident; or
  - Ensure security of supply or network stability during periods of outages, unavailability or maintenance on any water infrastructure in Sydney Water's areas of operation.

In making the draft decision, IPART notes that:

- While economic arguments support unregulated pricing agreements where SDP has limited monopoly power (e.g. when it operates outside of drought), in its view unregulated pricing agreements would be inconsistent with the financial indifference principle in the Terms of Reference
- Removing the nil price to Sydney Water outside the 70/80 rule could weaken SDP's incentives to seek third-party customers, and increase SDP's dependence on Sydney Water.
- Relaxing the nil price when water is supplied as an emergency response measure in line with Sydney Water's proposal better aligns the 2017 Determination with the current Water Supply Agreement and would also allow SDP to be remunerated when required under the Water Supply Agreement to operate the plant as an emergency response measure.

### 2.3.3 SDP revised proposal

Our revised proposal accepts the draft decision to regulate prices outside drought for all customers given it is unlikely to be a material issue over the 2017-22 regulatory period. However, we consider that the scope of services subject to regulation should be reconsidered in future periods, to ensure it does not:

<sup>18</sup> SDP has limited monopoly power when it operates outside the 70/80 rule as water is not scarce and there are other sources of readily available water. IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p 39.

- Create a barrier to competition emerging in the market.
- Result in IPART applying different regulatory frameworks to the water businesses it regulates (for example, allowing SWC and HWC to enter into unregulated agreements), without a strong economic argument supporting these differences.

We support the draft decision to remove the nil charge for supply of water in exceptional circumstances. However, we note that the application of a regulated charge outside of drought will only allow SDP to recover the costs of the regulated services, namely an eight month restart followed by full operation at design capacity. SDP will be unable to deliver alternative operational modes, such as a low flow mode, which incur different costs.

## 2.4 Price control mechanism

There are a number of regulatory options available to regulate prices including price caps, tariff baskets and revenue caps. IPART's 2012 Determination specified maximum prices to apply to each of the defined regulated services and each price component of the services provided by SDP under different modes of operation. This represents a 'price-cap' form of regulation.

The appropriate form of price control is likely to vary depending upon the particular circumstances applying to the regulated business. While price caps are perhaps the most common form of price control (particularly used by IPART in its water determinations), revenue caps and tariff baskets have been utilised by other regulators in determining the prices charged by monopoly service providers.<sup>19</sup>

### 2.4.1 SDP October 2016 proposal

Our October 2016 proposal was to continue the use of price caps as the form of price control over the 2017-22 regulatory period. Notwithstanding the importance of ensuring that each individual price cap, such as the cap that applies to the charges for SDP's transition to restart mode, reflects the prudent and efficient costs of providing that service.

### 2.4.2 IPART draft decision

The draft decision is to continue regulating SDP's prices, both within and outside of drought for all customers, through a price cap that involves IPART setting the maximum price or cap for each component of our prices.

### 2.4.3 SDP revised proposal

We accept that a price cap remains an appropriate form of price control over the 2017-22 regulatory period, and our revised proposal is consistent with our October 2016 proposal and the draft decision.

However, the pricing flexibility provided to SDP should be reconsidered in future periods to ensure it promotes the long-term interests of our customers, and does not create a barrier to competition emerging in the market.

<sup>19</sup> For example, the AER currently uses a revenue cap form of price control for electricity networks as a way of managing uncertainty associated with the demand for services. Similarly the AER currently uses a tariff basket form of price control for gas networks given they are multi-product monopolies and this form of price control provides greater flexibility for a business to charge prices of individual products within an overall constraint on price increase for the defined basket of services.

### 3. Proposed changes to the incentive and risk management framework

**Table 3.1: Overview of our response to the draft decision on the incentive and risk management framework**

Our response to the draft decision on the incentive and risk management framework	
Abatement mechanism	<p>We agree with the continuation of an abatement mechanism that provides SDP with strong financial incentives to operate at full capacity when called upon, consistent with SDP's drought response role.</p> <p>We also agree with many of the draft decision's amendments that enable SDP to better manage fluctuations in output during drought by removing the 250ML daily cap on the abatement factor and introducing an 8 month grace period to remove perverse incentives for SDP to dispose of water during the ramp-up period. However we are concerned that the draft decision's amendments:</p> <ul style="list-style-type: none"> <li>• Are asymmetric and consequently focus solely on imposing penalties for under-performance, without rewards for over-performance;</li> <li>• Appear unreasonably punitive by carrying-over the abatement factor to fixed charges when the plant is returning to full production; and</li> <li>• Create risks associated with distinguishing between force majeure events that are insurable and those that are not, which will require clarification from IPART.</li> </ul> <p>We have proposed a number of further refinements to better achieve the underlying objectives of the mechanism, including implementing a genuine grace period and resetting the abatement factor to unity between drought episodes.</p>
Efficiency Adjustment Mechanism (EAM) / Efficiency Carryover Mechanism (ECM)	<p>We agree with the continuation of an EAM to provide SDP with additional incentives to pursue efficiency savings. However, a number of amendments to the EAM have the potential to create barriers to the pursuit of efficiency savings initiatives including:</p> <ul style="list-style-type: none"> <li>• An asymmetric treatment of efficiency gains and losses;</li> <li>• An artificial distinction between permanent and temporary efficiency gains; and</li> <li>• A 5-year limit on the retention of efficiency savings.</li> </ul> <p>We have proposed a number of refinements that align SDP's incentives with those of our customers, including removing the artificial distinction between permanent and temporary efficiencies to minimise regulatory risks and administrative complexities that have the potential to create barriers to the pursuit of efficiency savings initiatives.</p> <p>However, we accept IPART's reasoning that savings should not be carried forward for an indefinite period of time, on the basis that the new operating rules in the 2017 Metropolitan Water Plan mean that operational periods will be separated by longer periods of time.</p> <p>We will work with IPART to refine the reporting requirements to ensure they remain fit for purpose over the 2017-22 regulatory period.</p>
Pass through of energy network charges	<p>We agree that retaining the pass through mechanism for electricity network charges remains appropriate, given the significant uncertainty with electricity network prices over the medium term (i.e. AER merits review and judicial review process).</p>

## Our response to the draft decision on the incentive and risk management framework

<p>Cost pass through mechanism for unforeseen and uncontrollable events</p>	<p>We do not agree with the draft decision to exclude a targeted mechanism to manage costs associated with unforeseen and uncontrollable events. We also do not agree with the draft decision's findings that:</p> <ul style="list-style-type: none"> <li>• It is efficient to partially expose SDP to these risks (such as changes to licence conditions) given that in practice SDP has little influence over the setting of its regulatory environment, whereas IPART included and utilised pass through mechanisms for costs associated with changes in licence conditions for the then state-owned electricity network businesses.</li> <li>• SDP's proposed cost pass through framework is too general, given the proposed event definitions and pass through framework are modelled on previous pass through mechanisms included in IPART Determinations.</li> <li>• The cost impacts associated with unforeseen and uncontrollable events are symmetric such that SDP can 'win some, lose some' over time.</li> <li>• Uncertainty in SDP's operating environment (such as changes to the 2017 MWP and/or amendments to SDP's operating licence) are adequately addressed by references to the licence within the Draft Determination.</li> <li>• Re-opening the determination is an efficient and cost-effective alternative to manage these risks.</li> </ul> <p>As is well-accepted under other regulatory frameworks governing infrastructure providers (including IPART's electricity network and retail determinations), a targeted cost pass through mechanism to manage risks resulting from unforeseen and uncontrollable events can represent an efficient allocation of risk, maintain appropriate financial incentives and ensure efficient price signals are sent to customers regarding the costs of providing services.</p> <p>Our revised proposal maintains the introduction of a targeted cost pass-through mechanism to efficiently manage the risks associated with a number of unforeseen and uncontrollable events.</p>
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<p>Energy Adjustment Mechanism (EAM)</p>	<p>We accept the draft decision to amend the EAM and the balance of risk shared between SDP and its customers over the 2017-22 regulatory period for the purposes of our revised proposal. However, the draft decision to limit the application of the EAM to water security mode should be reconsidered in future periods.</p> <p>We also accept the broad principles in the draft decision to introduce a 'general prudence' test. Our revised proposal includes SDP undertaking a prudent form of energy trading (i.e. in well-defined circumstances) that provides access to potential gains from forward selling excess energy (while limiting SDP's risk exposure) from 1 April 2018 following a necessary transition period, that is in the long-term interests of our customers.</p> <p>We have included the operating costs of undertaking this energy trading in our forecast corporate costs and we seek guidance in the final decision on the principles guiding IPART's proposed ex-post prudence assessment of our energy trading approach to provide SDP with regulatory certainty over the 2017-22 regulatory period.</p> <p>We will work with IPART to refine the reporting requirements to ensure they remain fit for purpose over the 2017-22 regulatory period.</p>
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The second step in determining the regulatory framework for SDP's services is to decide on the incentive and risk management framework.

In our view, IPART's 2017 Determination will promote the long-term interests of our customers if it ensures that:

- There are incentives and funding to invest, operate and maintain a safe, reliable and responsive water supply and water security service and that these incentives align with those of our customers, including SWC and end-use water customers as well as the broader community.
- There is a reasonable opportunity to recover efficiently and prudently incurred expenditure on the SDP plant and pipeline consistent with an efficient allocation of risk between SDP and customers, including SWC and end-use water customers, so that it supports continued access to financing.
- The regulatory settings appropriately balance stability and predictability to minimise regulatory risk and promote investment in long-lived assets (and continued access to financing) yet are sufficiently flexible



to be capable of efficiently responding to the inevitable uncertainties associated with SDP's operating framework and SDP's costs within this framework.

This section sets out our proposed incentive and risk management framework for the 2017-22 regulatory period.

### 3.1 Abatement mechanism

The 2012 Determination included an abatement mechanism intended to create a financial incentive for SDP to maximise its production of drinking water when required under its operating rules. This mechanism:

- Reduces the daily service charge applicable on a given day while the plant is in operation mode if the average of the preceding 365 days of production is less than the specified nameplate capacity of the plant (i.e. 250 ML per day). The mechanism does not apply to days when the plant is in a shutdown mode.
- Determines the average daily production over 365 days of full production with shutdown event days and force majeure events excluded.

#### 3.1.1 SDP October 2016 proposal

Our October 2016 proposal was to support an abatement mechanism that provides strong financial incentives to ensure the plant operates at full capacity when called upon. We agree that providing strong financial incentives for the performance of our assets, subject to events not within our control, is consistent with sound commercial practice.

However, in order for an abatement mechanism to best achieve its objectives of aligning our incentives with those of our customers, our October 2016 proposal:

- Highlighted that the current abatement mechanism needs to be refined in line with a number of key principles, including ensuring that:
  - There is not a perverse incentive for SDP to discharge high quality drinking water to the ocean in a period of low water availability when restarting the plant, contrary to optimising its role in water security.<sup>20</sup>
  - SDP's performance is assessed by examining actions *within its control* as distinct from assessing performance and potentially imposing financial penalties on SDP when production is curtailed due to factors *outside its control*.<sup>21</sup>
  - Any financial incentives are proportionate and symmetric in regard to SDP's role in water security, and to align the mechanism with the design parameters of the plant.
- Included a number of refinements including:

<sup>20</sup> It can take up to eight months before the plant becomes fully operational after being in water security shutdown, although after about four months, SDP will progressively commence producing potable water that meets the standard required by SWC. Under the definition of the Restart Period in the 2012 Determination, the period ends as soon as SDP supplies water to a customer. As SDP would not yet be producing 250ML per day, supplying water to SWC as the plant is restarting would result in SDP's water service charge immediately being abated. This provides SDP with an incentive to dispose of any water that is produced during the ramp-up period (i.e. return it to the sea), rather than supplying it to SWC, in order to avoid being penalised.

<sup>21</sup> The current mechanism excludes shutdown event days and force majeure events from the calculations consistent with the principle that SDP should not be penalised for events outside its control. This feature should be retained in the abatement mechanism. However, other circumstances where production of the plant may be curtailed other than through factors within SDP's control (e.g. where SWC are unable to receive full supply) are not adequately addressed in the current mechanism. The potential consequences for abatement of this lost opportunity is recognised by SWC and is addressed in the WSA.



- Introducing a 'grace period' of 8 months – so that SDP is not subject to abatement during the period between being instructed to switch on and producing water at 100% of capacity – to remove the incentive for SDP to dispose of water to the sea rather than supply it to SWC.
- Changing the calculation methodology to better align the financial incentives of the mechanism with the impact of SDP's production performance on water security outcomes.<sup>22</sup>

SDP also noted that it had agreed with SWC on an opening “Availability Capacity” of 260.026ML for the next plant operation period. This figure is based on the prior operating history of the plant, namely plant production levels on “Availability Days” after the plant commenced operations and until storage levels reached 80 per cent.

### 3.1.2 IPART draft decision

The draft decision is to retain an abatement mechanism that provides SDP with strong financial incentives to operate at full capacity when called upon, consistent with SDP's drought response role, but to refine a number of elements of the current abatement mechanism. In particular, the draft decision is to:

- Refine the application of the mechanisms so that from 1 July 2018 it would:
  - Provide SDP with an 8-month grace period when the plant first responds to drought during which time neither the days nor any volumes supplied on those days are counted towards the calculation of the abatement formula.
  - Apply uniformly to all days during drought (i.e. including shutdown and restart days as well as operation days), including during the grace period.
  - Include days and volumes in the calculation of the abatement factor for days when SWC is unable to accept water but rather place the onus on SWC to reimburse SDP for any under-recovery of costs through payment outside of the 2017 Determination.
  - Not apply abatement to service charges on days where SWC requests water under emergency response and days when supply capacity is reduced as a result of an uninsurable force majeure event.
  - Not include days and volumes in the calculation of the abatement factor for days when SDP reduces production in order to comply with a law, binding direction or an order or similar made under law.
- Align the abatement mechanism with the design parameters of the plant by:
  - Removing the 250 ML cap on daily volumes for calculation of the abatement factor applied to daily fixed charges.
  - Retaining the averaging period of 365 days for calculation of the abatement factor.
- Introduce a true-up of fixed charges to claw back any over-recovery of revenue over a single episode of drought, which includes holding costs calculated using the relevant WACC, and is payable at the end of a drought response period.
- Reset the abatement factor to one, if the plant exits drought with an abatement factor above one.
- Retain and use the abatement factor, if the plant exits drought with an abatement factor less than one.
- Deem the Daily Volume on 364 Availability Days preceding the first Availability Day equal to 250 ML per day for the 2017 determination period where no prior history exists.

<sup>22</sup> Our October 2016 proposal included adjusting the recorded volumes of production on days where production is curtailed due to actions of others (e.g. SWC being unable to receive full supply) by deeming production for those days to be the higher of 250 ML or the average of the preceding five Availability Days of unconstrained production

### 3.1.3 SDP revised proposal

We agree with the continuation of an abatement mechanism that provides SDP with strong financial incentives to operate at full capacity when called upon, consistent with SDP's drought response role.

We also agree with many of the draft decision's amendments that enable SDP to better manage fluctuations in output during drought by removing the 250ML daily cap on the abatement factor and introducing an 8 month grace period to remove perverse incentives for SDP to dispose of water during the ramp-up period.

We also accept, for the purposes of our revised proposal for the 2017-22 regulatory period, that:

- The mechanism be broadened to apply to all days during a drought response period, regardless of the mode the plant is in, as proposed in the draft decision (except that abatement should not apply during the grace period).
- Service charges should not be abated on days where SWC requests water under an Emergency Response Notice and the days and volumes for such days should not be included in the calculation of the abatement factor.
- SDP would seek recompense from SWC outside of the Determination rather than applying abatement to days when SWC is unable to accept desalinated water.
- Days when SDP reduces production in order to comply with a law, binding direction or an order or similar made under law should not be included (days and volumes) in the calculation of the abatement factor.
- A true-up of fixed charges be introduced where any revenues in excess of regulated service charges over a single episode of drought, including holding costs calculated using the relevant WACC, are refunded at the end of a drought response period. We note that in subsequent regulatory periods, it may be more appropriate to apply a corporate bond financing rate, consistent with the draft decision on the EAM, rather than the WACC.

However, we are concerned that some of the amendments set out in the draft decision:

- Are asymmetric and consequently focus solely on imposing penalties for under-performance, without duly recognising over-performance.
- Could impose unreasonably punitive and arbitrary penalties by carrying over the abatement factor to fixed charges when the plant is returning to full production.
- Create risks associated with distinguishing between force majeure events that are insurable and those that are not, which will require clarification from IPART.
- Appear to create tension with SDP's licence conditions which oblige SDP to supply water above the nameplate capacity of 250 ML/day if at all possible – with the 250 ML/day average over 365 days being a minimum expectation.<sup>23</sup>

We have proposed a number of further refinements to better promote the underlying objectives of the mechanism and to recognise a number of developments that have occurred since our October 2016 proposal, including the new operating rules in the 2017 MWP and the agreed reinstatement date of the plant. The proposed refinements include:

- Delaying the introduction of the abatement mechanism to apply to all days during a drought response period to 13 December 2018 (rather than 1 July 2018) in line with the timeframe in the Agreed

<sup>23</sup> SDP's Network Infrastructure Licence contains requirements for SDP to maximise the production of water when SCA's storage levels fall below 70% and until they rise above 80%.

Reinstatement Plan that SDP has put in place with the NSW Government following the extreme storm event at Kurnell in December 2015.

- Incorporating an additional \$1.1m (rounded) in the forecast operating expenditure over the 2017-22 regulatory period to reflect the additional costs of obtaining reasonable BI insurance coverage for abatement during drought following an insurable Force Majeure event (refer Appendix 5-2: Aon 2017 Business Interruption Insurance Review).
- Providing greater certainty in the 2017 Determination around how the term “uninsurable force majeure event” will be interpreted and this is best done by strengthening the links with IPART’s existing role in monitoring SDP’s compliance with the insurance provisions in the WICA licences. Specifically, the 2017 Determination should explicitly state that service charges will not be abated for any force majeure events which are not fully covered by SDP’s insurance policies that are accepted by IPART as satisfying the WICA licence conditions. IPART has appropriately recognised that SDP cannot increase its BI coverage retrospectively for the current force majeure event. In defining “uninsurable events” IPART should include future events which occur prior to a drought response period and for which SDP will be unable to retrospectively obtain BI coverage for should a drought response trigger be reached during the period the plant is being reinstated. If IPART does not properly define “uninsurable events” in this way IPART will need to include the additional BI premium cost of \$1.1m in the Water Security mode allowed costs for SDP for the 2017-2022 regulatory period. SDP has not included in this additional BI premium cost in its revised proposal for water security mode. SDP only included this cost in its revised proposal in operational mode.
- Excluding abatement of service charges during a restart grace period under any circumstances (but would accept that supplied production volume on the days during a grace period be excluded in the calculation of the Available Capacity term in the abatement formula).
- Resetting the abatement factor to unity at the end of a drought response period by deeming the Daily Volume on the 364 Availability Days preceding the first Availability Day equal to 250 ML per day for the next drought response period (noting that this means SDP is foregoing its current 260 ML factor previously agreed with SWC).

Appendix 3-1 provides further detail on the proposed refinements to the abatement mechanism.

## 3.2 Efficiency Carryover Mechanism

It is well recognised that regulated businesses may face uneven incentives to reduce costs over the regulatory period. This is because in the absence of a mechanism to equalise the incentive to achieve efficient savings throughout the regulatory period, regulated businesses may have a greater incentive to achieve efficiency gains in the earlier rather than the later years of the regulatory period. This can reduce the total efficiency savings made by regulated businesses.

IPART’s 2012 Determination incorporated an efficiency adjustment mechanism (EfAM) to equalise the incentive to achieve efficient savings throughout the regulatory period in accordance with the terms of reference. A key feature of this mechanism applying to SDP - now called an ‘Efficiency Carryover Mechanism’ (ECM), however, is that it is mode-dependent. This means that it only provides for the assumed share of benefits to be retained if the plant operates in the same mode for the next four years, unless SDP can demonstrate that gains/losses are not directly attributable to that mode.

### 3.2.1 SDP October 2016 proposal

Our October 2016 proposal noted our view that the incentive properties of the existing ECM are relatively weak as it provides few opportunities for SDP to retain any efficiency savings it makes. This is primarily because the current ECM only provides for the assumed share of benefits to be retained if the plant operates in the same mode for the next four years.

We proposed that the ECM applying to SDP be modified to allow mode-specific savings (overruns) to carryover, in constant real terms, for the next four years of the same mode, regardless of when that occurs. By helping to narrow the range of sharing ratios which apply in practice, this would strengthen the incentive properties of the mechanism. In SDP's view this approach is also more consistent with the intent of the Standing TOR.

Our October 2016 proposal did not support the adoption of the temporary/permanent savings/over-runs distinction as applied in the recent ECM schemes for SWC and HWC. In our view this adds considerable additional complexity (particularly in the context of SDP's already more complex mode-based scheme), given the practical difficulty in distinguishing between 'temporary' and 'permanent' savings, for little apparent benefit.

### 3.2.2 IPART draft decision

The draft decision on the ECM:

- Maintains the current approach of including efficiency savings, net of efficiency losses, for four years following the year they are achieved (i.e, five years total).
- Maintains the current treatment of mode specific efficiency savings (ie, held for up to five years, within a consecutive five year period, while SDP is in that specific mode).
- Adopt aspects of the ECM that IPART has applied to other IPART regulated water businesses, including:
  - Removing the requirement that in order to be carried over, efficiency savings must be the result of a 'management initiative', but require the business to demonstrate that the efficiency saving is permanent.
  - Shifting the ECM application period to use the five most recent years of actual data.
  - Adding a claw-back to ensure savings are held by SDP for a maximum of five years.

### 3.2.3 SDP revised proposal

Our revised proposal is to accept the revised ECM set out in the Draft Methodology Paper for the purposes of the 2017-22 regulatory period.

However, in our view the revisions do not materially improve the incentive properties or ease of administration of the mechanism.

While some elements of the draft decision result in some small improvements to underlying incentives (e.g. removal of the requirement to demonstrate that efficiency savings are the result of a management initiative and the introduction of a base service charge against which general savings can be accrued), in our view the proposed revisions and supporting analysis do not address more fundamental issues with the mechanism or how a general ECM should be modified to best address the mode-dependent nature of SDP's operation. While IPART states that "removing the incentive to delay savings is the sole purpose of the ECM<sup>24</sup>", it does not fully recognise that in the case of a desalination plant these incentives depend more on the expected duration of the mode than the duration of the regulatory period.

IPART appears particularly concerned to provide strong incentives for general savings rather than mode-specific savings on the basis that these savings are more valuable than mode-specific savings because they occur all the time, whereas a mode-specific saving only occurs part of the time (particularly for savings achieved in operation mode). While this is true, it is also the case that there is likely to be more potential

<sup>24</sup> IPART, Sydney Desalination Plan Pty Ltd- Energy Adjustment and Efficiency Carryover Mechanisms, Draft Methodology Paper Water, March 2017, p.24.

savings achievable in operation mode, as there are more activities being undertaken which contribute to operating costs which may be subject to innovative approaches in the future. By continuing to limit the carryover of any savings made in operation mode to the next five calendar years, the incentive provided by the ECM for SDP to make such savings remains muted, and would be primarily driven by the expectation of how long the current drought is likely to last.

However, we recognise that with the lowering of SDP's "on" trigger for drought in the 2017 Metropolitan Water Plan to 60% of water storages, SDP is now even more likely to experience extended periods of time in shutdown mode. Consequently, operational periods will be increasingly separated by longer periods of time and therefore the case for carrying over savings to the next operational period is weakened. Therefore, we accept IPART's reasoning that savings should not be carried over for an indefinite period.

We will work with IPART to refine the reporting framework to ensure they remain fit for purpose over the 2017-22 regulatory period.

### 3.3 Pass through of electricity network charges

Desalination can be an energy intensive process. While the cost of energy is a significant proportion of SDP's operating expenditure when in operation mode, when in shutdown modes (such as water security) the SDP's energy requirements are modest, meaning the cost of energy is a small proportion of SDP's operating expenditure. In addition to the volatility and uncertainty in the volume of energy transported to the SDP, there is considerable uncertainty as to the cost of transporting this energy (on a cost per unit basis) with network charges, as levied by Ausgrid, subject to independent regulation by Australian Energy Regulator (AER).

IPART's 2012 Determination incorporated a symmetrical mechanism to pass through the fixed and variable network charges (as determined annually by the AER) into SDP's prices to ensure SDP did not to bear the risk associated with changes in network costs and that SDP's prices reflect the actual network costs.

#### 3.3.1 SDP October 2016 proposal

Our October 2016 proposal was to retain this mechanism to enable SDP to pass through the fixed and variable network charges over the 2017-22 regulatory period, given the continued uncertainty with electricity network prices over the medium term, consistent with IPART's preliminary view.<sup>25</sup>

#### 3.3.2 IPART draft decision

The draft decision retains the mechanism to enable SDP to pass through the fixed and variable network charges over the 2017-22 regulatory period.

#### 3.3.3 SDP revised proposal

Our revised proposal is consistent with our October 2016 proposal and the draft decision.

### 3.4 Cost Pass Through mechanism

#### 3.4.1 SDP October 2016 proposal

Our October 2016 proposal was to introduce two additional cost pass through mechanisms:

- **A general cost pass through mechanism** to manage the risks associated with unforeseen and uncontrollable regulatory (such as changes to the MWP or licence conditions), taxation and

<sup>25</sup> IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p61.

extraordinary events (such as natural disasters or events that cannot be adequately or cost effectively insured)

- **A specific cost pass through mechanism** to manage the risks associated with unknown costs (or savings) associated with the Kurnell Tornado remediation, after accounting for the relevant insurance policy limit and any avoided maintenance costs.

Our October 2016 proposal noted that these mechanisms to manage a number of unforeseen and controllable events:

- Is likely to be an efficient regulatory response to these risks, and result in lower costs (and prices) for customers, given that it will ensure risk is allocated to parties best able to manage those risks.
- Is consistent with the TOR which provide for SDP to recover the costs of supplying water to ensure the SDP can continue to effectively fulfil its water supply and water security services, while ensuring that SDP's prices are no more than necessary to provide its services.
- Is consistent with mechanisms in other regulatory determinations that apply to infrastructure services in Australia (including IPART's electricity network and retail determinations).
- Can be designed to be consistent with IPART's criteria (and IPART Act) for a cost pass-through mechanism.

Our October 2016 proposal also developed definitions of the eligible events and process for initiating, reviewing and implementing any pass through applications, consistent with other regulatory determinations that apply to infrastructure services in Australia (including definitions in IPART's electricity network and retail determinations).

### 3.4.2 IPART draft decision

The draft decision is to exclude a general cost pass-through mechanism in the 2017 Determination on the basis that:

- The proposed general cost pass-through mechanism do not meet IPART's cost pass through criteria. Specifically the draft decision notes that in terms of:
  - *Extraordinary events* (e.g, natural disasters), SDP can decide whether to insure against these events (assuming they are insurable) and can influence the costs resulting from these events, therefore, it is efficient for SDP to be at least partially exposed to these risks.
  - *Regulatory changes* (e.g, Metropolitan Water Plan), SDP has an ability to influence the Metropolitan Water Directorate and some influence over the costs resulting from a change in the Metropolitan Water Plan, therefore, it is efficient for SDP to be at least partially exposed to these risks.
  - *Tax changes*, SDP would need to identify a potential tax change, identify the efficient cost, and show the efficient cost exceeds a materiality threshold.
- The current approach to setting efficient cost allowances is working effectively, including:
  - Expenditure reviews to assess efficient expenditure forecasts.
  - Expenditure allowances that mean over the long-run unexpected cost increases are expected to offset unexpected cost decreases.
  - Limited use of cost pass-throughs in circumstances that meet IPART's criteria.
  - The opportunity to re-open the determination if there is a significant change in costs.



The draft decision is to exclude a specific cost pass through mechanism in the 2017 Determination on the basis that the damage to the desalination plant is fully covered by SDP's insurance and will not impact prices.

### 3.4.3 SDP revised proposal

We do not agree with the draft decision to exclude a general cost pass through mechanism to manage costs associated with unforeseen and uncontrollable events.

While we agree with the broad principles contained in IPART's cost pass through criteria, we do not agree with the draft decision's findings that:

- It is efficient to partially expose SDP to these risks (such as changes to licence conditions) because it believes that SDP has some influence over the setting of its regulatory environment and the resulting costs. We note that:
  - In practice, SDP has little influence over the setting of its regulatory environment. For example, although SDP contributed information to the 2017 Metropolitan Water Plan, there was no formal consultation process and SDP had very limited ability to influence the outcome, unlike the state-owned water businesses who formed part of the formal governance arrangements for the development of the Plan. IPART's cost pass through criteria that "the regulated business cannot influence the likelihood of the trigger event or the resulting cost"<sup>26</sup> is overly narrow, and without some qualification on the degree of influence, could exclude virtually any aspect of SDP's operating environment and operating costs.
  - IPART included and utilised pass through mechanisms for costs associated with changes in licence conditions for the then state-owned electricity network businesses. It is not clear why it is more efficient for SDP to be exposed to the risks associated with changes to the regulatory environment than other businesses that IPART has regulated, particularly when it is arguable that the then state owned electricity network businesses had a greater ability to influence their respective licence conditions than SDP.<sup>27</sup>
- SDP's proposed cost pass through framework is "too general"<sup>28</sup>. We note that:
  - SDP's proposed event definitions and cost pass through processes<sup>29</sup> are consistent with those used by IPART in other determinations, and the draft decision does not provide guidance on which aspect of the event definitions and cost pass through processes require amendment.
  - In the event of a pass through event occurring (say a regulatory or taxation change), the proposed cost pass through processes would allow SDP "to identify a potential tax change, identify the efficient cost, and show the efficient cost exceeds a materiality threshold".<sup>30</sup> If IPART is suggesting that this needs to occur prior to the 2017 Determination coming into effect, then this does not reflect the fact that by their nature, these events are unforeseen and if any regulated business could foresee the event and the efficient costs for inclusion in the Determination, then there would be no need for a cost pass through mechanism.

<sup>26</sup> IPART, Draft Decision, p27.

<sup>27</sup> The NSW electricity network businesses their licences were amended in 2005 to reflect changed in reliability and other customer service standards, and IPART allowed the network businesses to pass through the efficient costs resulting from changes to these licence changes. <https://www.ipart.nsw.gov.au/Home/Industries/Energy/Reviews/Electricity/NSW-Electricity-Distribution-Network-Service-Providers-Applications-for-a-cost-pass-through/06-May-2006-Statement-of-Reasons-for-Decision/NSW-Distribution-Network-Cost-Pass-Through-Review-Statement-of-Reasons-for-decision-5-May-2006>

<sup>28</sup> IPART, Draft Decision, p28.

<sup>29</sup> For SDP to identify and propose the material change in the prudent and efficient costs, and for IPART to assess these costs, prior to prices being updated.

<sup>30</sup> IPART, Draft Decision, p28.



- The cost impacts associated with unforeseen and uncontrollable events are symmetric such that SDP can ‘win some, lose some’ over time. The draft decision does not provide any evidence regarding the extent to which the cost impacts associated with these events are symmetric, nor how the financeability metrics have been tested to ensure that SDP could ‘weather the storm’ to ensure it was able to manage both upside and downside cost impacts.
- Uncertainty in SDP’s operating environment (such as changes to the 2017 MWP and/or amendments to SDP’s operating licence) is adequately addressed by references to the licence within the Draft Determination.<sup>31</sup> Without a cost pass through mechanism there is no opportunity for prices to be updated during the 2017-22 regulatory period if a change in regulatory obligations resulted in a change in the efficient costs of providing services (without reopening the Determination).
- That re-opening the determination is an efficient and cost-effective alternative to manage these risks. In our view relying on re-opening the determination to address relatively straightforward adjustments to efficient costs (such as resulting from a change to the statutory tax rate) appears at odds with promoting regulatory certainty and minimising the regulatory burden, and with good regulatory practice.

As is well-accepted under other regulatory frameworks governing infrastructure providers (including IPART’s electricity network and retail determinations), a targeted cost pass through mechanism to manage risks resulting from unforeseen and uncontrollable events can represent an efficient allocation of risk, maintain appropriate financial incentives and ensure efficient price signals are sent to customers regarding the costs of providing services.

Our revised proposal maintains the introduction of a general cost pass-through mechanism to efficiently manage the risks associated with a number of unforeseen and uncontrollable events as detailed in Section 3.4.1 of our October 2016 proposal. We would welcome IPART’s guidance on the event definitions and cost pass through processes to ensure they meet IPART’s cost pass through criteria and TOR.

Our revised proposal excludes a specific cost pass through mechanism to manage the risks associated with unknown costs (or savings) associated with the Kurnell Tornado remediation.

### 3.5 Energy Adjustment Mechanism (EAM)

Desalination can be an energy intensive process. While the cost of energy is a significant proportion of SDP’s operating expenditure when in operation mode<sup>32</sup>, when in shutdown modes (such as water security mode) the SDP’s energy requirements are modest, meaning the cost of energy is a small proportion of SDP’s operating expenditure. To manage this energy volume uncertainty and the price risks associated with procuring energy in the National Electricity Market (**NEM**), SDP has long-term contracts to procure electricity from a renewable source to meet the plant’s operation needs at full capacity.

Recognising the role of SDP’s long-term contracts in managing these risks, the TOR require IPART to include a mechanism that shares these risks between SDP and its customers, including SWC and end-use water customers. The mechanism is required to:

- Allocate the costs or benefits to SDP customers of actual gains or losses beyond a core band that results from the difference between SDP’s costs of electricity and RECs under its contracts with Infigen and revenues from the sale of surplus electricity and Renewable Energy Certificate (**RECs**)

<sup>31</sup> IPART, Draft Decision, p17.

<sup>32</sup> In addition, the original planning conditions for the plant required SDP to develop a Greenhouse Gas Reduction Plan which mandates the development of a plan for managing greenhouse gas generation associated with electricity supply to the plant, including powering the plant with 100% renewable energy.

- Operate at times when SDP is in shutdown and restart modes and SDP complies with its requirements to maintain and operate the plant under clause A2 of its network operator licence.

IPART's current specification of the mechanism (the EnAM) for the 2012 Determination:

- Passes through 90% of gains or losses above a threshold of 5% of minimum contract cost, applied on an annual basis.
- Requires SDP to act prudently to minimise its exposure to losses on the resale of surplus electricity and RECs (now called 'Large-scale Generation Certificates or **LGCs**).

### 3.5.1 SDP October 2016 proposal

Our October 2016 proposal was that the EnAM should be retained in its current form as it applies during shutdown and restart modes, reflecting our view that it:

- Incentivises SDP to manage its energy costs, and at the same time, recognises that SDP has entered into a long-term least-cost energy procurement arrangement which shares the benefits of these least-cost options with customers
- Results in a reasonable allocation of energy price and volume risk between SDP (who has little control of when it operates) and its customers, including SWC and end-use water customers, without materially affecting SDP cash flows
- Is consistent with the TOR

However, we noted that limiting the application of the EnAM to when the plant is in shutdown and restart modes may act as a major constraint on future operating flexibility of the plant and in particular provides a strong disincentive for SDP to operate at less than full production levels (even if requested by SWC). We proposed that these perverse incentives be addressed by:

- Introducing a new mechanism analogous to the EnAM but applying specifically to partial production modes, including when SDP is operating under the 70/80 rule but SWC has requested SDP to reduce production (due to network constraints, for example); and
- Providing for SDP to enter into unregulated agreements when operating outside of the 70/80 rule which would include sharing of the energy price and volume risks.

SDP also supported using the 3-year series corporate bond financing rate for calculating pass-through amounts under the EnAM, consistent with IPART's preliminary view (see Section 7.7).

### 3.5.2 IPART draft decision

The draft decision (outlined in IPART's draft methodology paper) was to establish an EAM (renamed from EnAM) that:

- Increases SDP's share of gains and losses outside the core band from 10% to 20%. This change would take effect from 2017-18<sup>33</sup>
- Modifies the prudence test of SDP's energy trading policy and activity from a test of "no manifest imprudence" to a test of "the prudence of SDP's energy trading policy and activity". In assessing whether SDP's approach to managing energy is prudent, the test will review SDP's policy relating to the treatment of surplus energy and how this policy is executed given information available at the time.

<sup>33</sup> SDP's current share of gains and losses outside the core band of 10% would still apply for 2016-17.

- Amends how gains and losses on the sale of RECs are calculated so that these gains/losses are recognised in the year in which the RECs are sold (not accrued)
- Clarifies the method used to apply financing costs to EAM allowances
- Does not apply to partial production
- Maintains similar reporting requirements over the 2017 determination period, while recognising that additional information may have to be collected.

The draft decision notes that many of these amendments under the EAM have been made on the basis that:

- There may be benefits to both SDP and customers of a 'less passive' strategy in the treatment of surplus energy.<sup>34</sup>
- An amended sharing ratio and prudency test under the EAM may provide increased incentives for SDP to adopt a less passive approach to managing SDP's unutilised energy.
- There are benefits in providing greater clarity on how the EAM allowances will be calculated in the future.

Additionally, the draft decision not to extend the EAM to partial production was made on the basis that the under the TOR the scope of the EAM does not apply to a plant production mode.

### 3.5.3 SDP revised proposal

Our revised proposal accepts many elements of the draft decision on the EAM. In particular, for the purposes of our revised proposal for the 2017-22 regulatory period, we accept:

- The changes to the sharing ratios and the balance of risk under the EAM. However, we note that the actual proportions borne by SDP and customers will depend on the quantum of the gains and losses, which in turn is dependent on actual energy market prices relative to SDP's long-term contracts.
- Many of the proposed principles underlying the amendments to the 'general prudency' test. In particular, we:
  - Support the principle that the prudency test should be based on an ex-post review of how the policy was implemented *given information available at the time* (that is, without the benefit of hindsight on actual energy market prices i.e. not considering *hypothetical gains and losses*<sup>35</sup> – see comments below). However we note that the prudency test should also be based on an ex ante assessment of the energy trading policy to provide SDP with confidence that its focus over the 2017-22 regulatory should be on implementing its proposed strategy.
  - Support the principle that there are benefits in providing greater clarity on how the EAM allowances will be calculated in the future (this applies to how IPART may assess SDP's policy for managing unutilised energy and how IPART will calculate the gains and losses to be passed through to customers). For example, there are benefits in IPART clarifying the purpose of calculating the hypothetical gain or loss, given the proposed prudency test review relates to how the policy was implemented *given information available at the time*.

<sup>34</sup> IPART's consultant, Marsden Jacob Associates, found that over a limited review period SDP could have forward sold some portion of its contracted surplus one quarter ahead with estimated benefits of approximately \$0.5m to \$1m per annum on average in shutdown, depending on what proportion of SDP's surplus energy was forward sold. The costs of establishing and implementing this trading would need to be subtracted from these benefits.

<sup>35</sup> The draft decision notes that IPART will calculate both a *hypothetical gain or loss* (based on the spot market price) and an *actual gain or loss* (based on actual sale price which may be the spot market or a forward market price). IPART, Sydney Desalination Plant Pty Ltd Energy Adjustment and Efficiency Carryover Mechanisms, March 2017, p33.

- Agree with MJA that the gains to SDP and customers *over time* of undertaking a ‘less passive’ form of energy trading are likely to be modest given that:
  - While over the review period chosen by MJA there was a small forward price premium there was significant variability in this premium and therefore significant variability in the potential gains and losses from forward-selling.<sup>36</sup> For example, MJA highlight that there will be quarters when average spot prices exceed forward prices as in Q2 2016 such that *hypothetical gains* (based on the actual spot market prices) may significantly exceed *actual gains* (based on the forward price), and potentially offset any profits made in previous quarters.<sup>37</sup>
  - The volume of unutilised energy SDP could forward-sell is limited by the potential for SWC to request water under an emergency response (or the NSW Government, as per the 2017 MWD), which will then require SDP to consume energy as it ‘ramps-up’. While MJA assume that SDP could forward-sell up to 100% of surplus energy, it is critical to recognise the importance of limiting SDP’s risk exposure from being ‘caught short’ and being exposed to pool prices once again to meet ramp-up requirements in volatile and highly asymmetric spot prices (which can trade at prices up to \$14,00/MWh<sup>38</sup>). Given this risk, the volume of excess energy<sup>39</sup> that SDP could forward-sell will be less than 100% of surplus energy.
  - The upfront and ongoing costs of undertaking energy trading will largely offset any gains from forward selling unutilised energy. Independent expert advice from Seed Advisory indicates that for a ‘low risk strategy’ (where SDP does not speculate on its energy requirements or spot prices one quarter ahead, and only sells forward if the price is above the contract price) the upfront costs estimates range from \$95,000 - \$140,000 for establishing an appropriate trading and governance framework and the annual cost estimates for operating a trading activity range from \$45,000 - \$90,000 per annum<sup>40</sup> (broadly consistent with MJA’s estimate of annual ongoing costs of \$75,000<sup>41</sup>).
- The changes to how gains and losses on RECs are calculated.
- The calculation of financing costs applied to any gains or losses that are passed through in the next regulatory period (see further discussion in Section 7.7).
- That the EAM does not apply to partial production for the 2017-22 regulatory period only, however SDP proposes that this be reconsidered in future periods.

<sup>36</sup> MJA note that reviews of historical contract and spot prices have consistently shown that in all regions, contract prices have for most of the time been priced above spot prices, usually by about \$2 to \$5/MWh. Marsden Jacob Associates, *Reviewing Energy Costs for SDP: Report prepared for IPART*, February 2017, p13.

<sup>37</sup> MJA note that of the 16 quarters in 2012-17 regulatory period, 13 quarters had a positive trading profit of about \$100,000 (i.e. where SDP would have made a gain from forward-selling 50% of unutilised contracted energy). However, it notes that in one quarter (Q2 2016), there was a trading loss of almost \$1.3M (i.e. where SDP would have made a loss from forward-selling 50% of unutilised contracted energy) due to “extremely high pool prices occurring in NSW in Q2 2016 that were not forecast or factored into the prevailing Q2 2016 NSW contract swap curve as at 15 March 2016.” Marsden Jacob Associates, *Reviewing Energy Costs for SDP: Report prepared for IPART*, February 2017, p29.

<sup>38</sup> The market price cap in the NEM is currently \$14,000/MW, and the Cumulative Price Threshold is \$210,100. [http://www.aemc.gov.au/News-Center/What-s-New/Announcements/AEMC-publishes-the-Schedule-of-Reliability-Set-\(4\)](http://www.aemc.gov.au/News-Center/What-s-New/Announcements/AEMC-publishes-the-Schedule-of-Reliability-Set-(4))

<sup>39</sup> Unutilised energy is defined as ‘surplus energy’ (consistent with the definitions and procedures specified in the ‘Calculation of Shortfall Adjustment’ in SDP’s Infigen contracts) minus the energy requirements over the next forward quarter to meet ramp-up energy requirements, if SDP was subsequently called upon to operate after completing a trade. The request to operate could come from Sydney Water, in accordance with the Water Supply Agreement, or the NSW Government, as per the 2017 Metropolitan Water Plan.

<sup>40</sup> Seed Advisory, *Costs and Risks of Energy Trading*, April 2017.

<sup>41</sup> Marsden Jacob Associates, *Reviewing Energy Costs for SDP: Report prepared for IPART*, February 2017, p2.

- That additional information would need to be collected and we confirm our willingness to work with IPART to refine the reporting requirements to ensure they remain fit for purpose over the 2017-22 regulatory period.

Our revised proposal includes:

- SDP undertaking a prudent form of energy trading (i.e. in defined circumstances) from 1 April 2018, following a necessary transition period. SDP will be required to obtain an Australian Financial Service (AFS) Licence and put in place the appropriate governance and administrative arrangements that drive the minimum establishment phase of nine months from 1 July 2017 to 1 April 2018 (see Figure 3.2 and Seed Advisory's independent expert report *Costs and Risks of Energy Trading*, Appendix 3-2).
- SDP recovering the forecast costs of establishing and undertaking this prudent form of energy trading over the 2017-22 regulatory period in our forecast corporate costs, consistent with the 'base, step, trend' approach to forecasting our operating expenditure. The forecast costs of performing this additional function (i.e. the 'step change' in costs) reflect advice from independent expert Seed Advisory for a low risk strategy and are broadly consistent with estimates from MJA estimates (although MJA do not consider the set up costs to establish the trading and governance framework).<sup>42</sup> SDP has adopted the upper end of the "low risk" range in the Seed Advisory Report as it intends to adopt aspects of the "low risk" strategy as well as will investigate one aspect of the "moderate risk" strategy. Specifically, SDP will give further consideration to a balanced strategy that may involve selling unutilised energy at prices below the contract. SDP will further consider the nature of any forward premium, including its variability (particularly given the volatility in recent months) even though there may have historically been a modest premium on average for forward selling. We intend to conduct analysis on this aspect before finalising the revised energy trading strategy, noting that any trading strategy has to be dynamic and respond to market conditions and drivers.
- This balanced strategy will be underpinned by the following principles that seek to provide SDP (and customers) with access to gains from forward selling excess energy while limiting SDP's risk exposure from purchasing in volatile and highly asymmetric spot prices:
  - *SDP will not speculate on its ramp up energy requirements one quarter ahead* given there is some probability that SWC (or the NSW Government) requests water under an emergency response, which will then require SDP to consume energy as it 'ramps-up'. For this reason SDP will only consider forward-selling excess energy<sup>43</sup> (i.e. net of ramp-up requirements) having taken account of:
    - Material impacts of SDP being 'caught short' and being exposed to the spot market;
    - Current risk profile assumed by SDP's debt and equity holders and the rate of return in the 2017 Determination; and
    - Resources and skills required to prudently trade in the market are unlikely to be in proportion to the potential gains.
  - *SDP would commence this prudent form of energy trading following a necessary transition period*, to allow SDP sufficient time to consider the final decision, seek legal advice and finalise the necessary regulatory and market arrangements (see Figure 3.2).

In considering the draft decision and formulating our revised proposal we considered:

<sup>42</sup> Seed Advisory, *Costs and Risks of Energy Trading*, April 2017.

<sup>43</sup> Excess energy is defined as 'surplus energy' (consistent with the definitions and procedures specified in the 'Calculation of Shortfall Adjustment' in SDP's Infigen contracts) minus the energy requirements over the next forward quarter to meet ramp-up energy requirements, if SDP was subsequently called upon to operate after completing a trade. The request to operate could come from Sydney Water, in accordance with the Water Supply Agreement, or the NSW Government, as per the 2017 Metropolitan Water Plan.

- Expert advice from Seed Advisory relating to the risks SDP may be exposed to if undertaking energy trading activities (see Figure 3.1), the energy trading related capabilities SDP will need to develop and the order of magnitude costs and timeframes associated with their development (Seed Advisory's report is provided at Appendix 3-2).
- The key principles guiding a prudent form of energy trading and an ex-post review of how the policy was implemented *given information available at the time*.
- The risk profile for SDP as a water business that underpins our regulatory WACC and the risk profile our financiers adopt for SDP (which in turn drives SDP's cost of debt). This risk profile reflects SDP being an infrastructure asset owner not a merchant energy business (see Box 1).



### Box 1: Energy trading and SDP's cost of capital

IPART's approach to setting the rate of return is to set an allowed return on capital commensurate with the risk of the business that is being regulated. This is manifest in the adoption of firm-specific parameters — such as equity beta, capital structure, credit rating, and cost of debt — as well as market-wide parameters such as the risk-free rate and the market risk premium, which are the same for all firms across the market.

Consequently, those firm-specific parameter estimates reflect the risk of the water businesses that IPART regulates:

- To date, SDP has managed its energy position such that it is not carrying a risk of having to repurchase on-sold energy at potentially high spot prices.
- Also, other water businesses that IPART regulates do not bear such a risk. Thus, the current set of parameter estimates reflect the risk of a water business without the risk of loss from having exposure to high pool prices of electricity as a consequence of forward selling surplus electricity and later being called upon to operate and consequently having to buy the energy in the spot market.

If the SDP energy trading policy were to be revised so that there was a risk of SDP having to repurchase on-sold energy at potentially high spot prices, the risk characteristics of SDP would have changed. Depending on the magnitude of such a risk, a revision of the firm-specific parameters (that are based on the risk of the entity) may be required. To determine the potential impact of a different energy trading strategy, the first step would be for IPART to quantify the probability of losses and the potential magnitude of losses. The second step would be to factor in these potential losses into a reconsideration of IPART's parameter estimates for:

- Capital structure – other things equal, a greater risk of material losses occurring would result in a greater equity buffer having to be maintained to absorb such losses in the event that they occur;
- Credit rating – other things equal, a greater risk of material losses occurring would put pressure on the credit rating; and
- Cost of debt – a greater risk of material losses would likely flow through to the cost of debt finance.

If SDP were to adopt an aggressive trading strategy (e.g., where SDP actively trades energy, buying and selling material amounts of energy in pursuit of profits), the very nature of SDP's business would be changed, becoming more of a merchant energy trading business. This would require a reconsideration of all firm-specific WACC parameters, including the equity beta.

In formulating its trading strategy, SDP will seek to avoid the risk of any loss arising from having to buy back energy (potentially at a spot price above the price that was achieved for the forward sale) and therefore avoid the consequent capital structure, cost of debt and credit metric impacts discussed above by only trading surplus energy.



Figure 3.1: Seed Advisory's summary of trading strategies

Criteria	Trading strategy		
	Low risk	Moderate risk	Higher risk
<b>Volume restrictions</b>	<ul style="list-style-type: none"> <li>Only sell volume in excess of allowance for estimated usage in the event of any potential ramp up.</li> </ul>	<ul style="list-style-type: none"> <li>Only sell volume in excess of minimum usage volume in water security mode.</li> </ul>	<ul style="list-style-type: none"> <li>Only sell volume in excess of minimum usage volume in water security mode.</li> </ul>
<b>Trading period</b>	<ul style="list-style-type: none"> <li>One quarter ahead</li> </ul>	<ul style="list-style-type: none"> <li>One quarter ahead</li> </ul>	<ul style="list-style-type: none"> <li>Up to three quarters ahead</li> </ul>
<b>Trading direction</b>	<ul style="list-style-type: none"> <li>Selling only</li> </ul>	<ul style="list-style-type: none"> <li>Selling and buy back if required due to ramp up production.</li> </ul>	<ul style="list-style-type: none"> <li>Selling and buy back if required due to ramp up production.</li> </ul>
<b>Decision period</b>	<ul style="list-style-type: none"> <li>One month before a quarter commences</li> </ul>	<ul style="list-style-type: none"> <li>One month before a quarter commences except in the event of a buy back which would be as required.</li> </ul>	<ul style="list-style-type: none"> <li>One month before a quarter commences except in the event of a buy back which would be as required.</li> </ul>
<b>Decision criteria</b>	<ul style="list-style-type: none"> <li>Only sell if the futures price after allowing for transaction costs is in excess of the Infigen contract price</li> </ul>	<ul style="list-style-type: none"> <li>Only sell if futures price after allowing for transaction costs is in excess of the forecast spot price.</li> <li>Buy back may be required in the event of a requirement to ramp up production.</li> </ul>	<ul style="list-style-type: none"> <li>Only sell if futures price after allowing for transaction costs is in excess of the forecast spot price.</li> <li>Buy back may be required in the event of a requirement to ramp up production.</li> </ul>

Source: Seed Advisory, Costs and Risks of Energy Trading, April 2017.

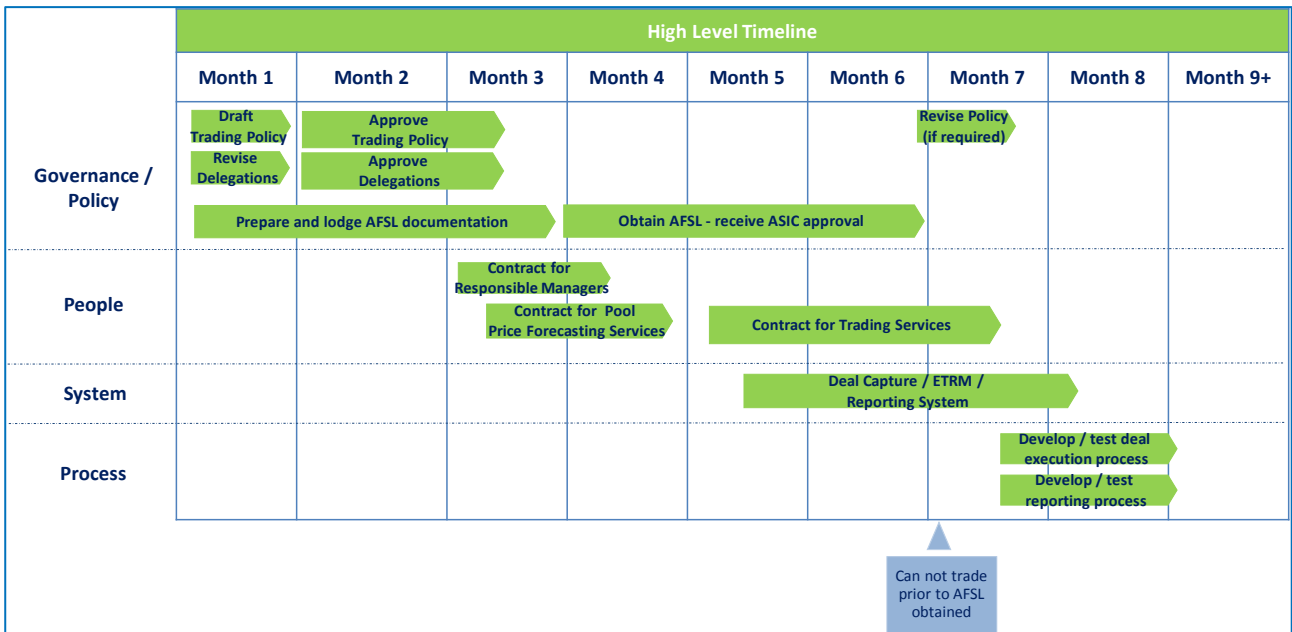
To allow SDP to implement a prudent form of energy trading consistent with these principles we welcome further guidance in the final decision on:

- How IPART will assess efficiency and prudence of SDP's energy trading policy as part of the next price review given the inherent differences between assessing the prudence of capital expenditure and the prudence of energy decision-making
- How IPART will use the calculation of the hypothetical gain or loss in determining the EAM pass through amounts. SDP seeks clarity as to how the purpose and purported transparency benefits from the calculation of a *hypothetical gain or loss*, given it is a calculation with the benefit of hindsight on actual energy market prices which no market participant has in formulating its energy policy. Consider the circumstance where there are large differences between the two amounts —say if hypothetical gains exceeded actual gains due to actual spot prices exceeding forward prices—as they have done over the first four months of 2017 (i.e. there is a negative forward price premium). If SDP had chosen to forward-sell a proportion of its surplus energy ((in line with the MJA recommendations) would IPART assume this was a prudent strategy (given there has historically been a forward price premium) even though the actual gains were less than the hypothetical gains or would IPART assume that the prudent strategy would have been for SDP to effectively sell surplus energy at spot prices (as SDP currently does). Consistent with the principle that the prudence test should be based on an ex-post review of how the policy was implemented *given information available at the time*, the purpose of calculating the hypothetical gain or loss is not clear and creates regulatory uncertainty.
- How IPART will incorporate the upfront and ongoing costs of undertaking energy trading in its 2017 Determination. We note the draft decision appears to indicate that these costs will be considered as

part of the calculation of SDP’s share of any gains and losses.<sup>44</sup> Our revised proposal incorporates these costs in our forecast corporate costs (consistent with a ‘step change’ in costs), which is SDP’s preferred approach as it is consistent with standard regulatory practice.

- The types of information IPART would expect SDP to provide to IPART as part of the reporting framework that meets IPART’s reporting requirements.

**Figure 3.2: Seed Advisory recommended transition period to undertaking a prudent form of energy trading**







Source: Seed Advisory, Costs and Risks of Energy Trading, April 2017.

<sup>44</sup> IPART, *Sydney Desalination Plant Pty Ltd Energy Adjustment and Efficiency Carryover Mechanisms*, March 2017, p35.

## 4. Revenue requirements for our water supply and security services

**Table 4.1: Overview of our response to the draft decision on revenue requirements**

Our response to the draft decision on revenue requirements		
Notional revenue requirements- water security mode	<p>We do not agree with the draft decision on the revenue requirements for the plant and pipeline in water security mode, specifically the draft decision on:</p> <ul style="list-style-type: none"> <li>• Opening Regulatory Asset Base (RAB) (see Section 7.2)</li> <li>• Pipeline asset lives (see Section 7.6).</li> </ul> <p>Our proposed revenue requirement for the plant and pipeline for the 2017-22 regulatory period in water security mode is \$866.26m (exclusive of electricity network charges), which is:</p> <ul style="list-style-type: none"> <li>• 19.6% lower than the approved revenue requirements in water security mode for the 2012-17 regulatory period, on a cost per customer basis (excluding the impact of inflation).</li> <li>• 2.2% higher than the draft decision on the revenue requirements in water security mode,</li> </ul>	
Notional revenue requirements- full operation mode	<p>We do not agree with the draft decision on the revenue requirements for the plant and pipeline in full operation mode, specifically the draft decision on:</p> <ul style="list-style-type: none"> <li>• Cost per unit of energy (see Section 5.3)</li> <li>• Opening Regulatory Asset Base (RAB) (see Section 7.2)</li> <li>• Pipeline asset lives (see Section 7.6)</li> </ul> <p>Our proposed revenue requirement for the plant and pipeline for the 2017-22 regulatory period in full operation mode is \$1,184.55m (exclusive of any restart and electricity network charges), which is:</p> <ul style="list-style-type: none"> <li>• 18.6% lower than the approved notional revenue requirements in full operation modes for the 2012-17 regulatory period, on a cost per customer basis (excluding the impact of inflation).</li> <li>• 0.5% lower than the draft decision on the revenue requirements in full operation mode.</li> </ul>	
Transition to restart	<p>We do not agree with the draft decision on the revenue requirements for transition to restart.</p> <p>Specifically, we do not agree with the draft decision on the volume of energy required during restart and our revised proposal maintains the volume of energy in restart submitted in the October 2016 proposal (see Section 5.3).</p>	
Transition to shutdown	<p>We agree with the draft decision on the revenue requirements for the transition to shutdown.</p>	

The notional revenue requirements represent the amount of revenue we need to generate over the 2017-22 regulatory period to allow us to provide the water supply and water security services under the MWP as well as our obligations to SWC under the WSA. This includes the costs of efficiently and prudently investing, operating and maintaining our assets efficiently and earning a reasonable return on our investment.

This section sets out our proposed revenue requirements for water security and full operation mode—as well as the notional revenue requirement associated with a restart and transition to water security mode. In our view, IPART's 2017 Determination will positively affect the services the SDP provides and promote our customers' long-term interests if it ensures that there is a reasonable opportunity to recover these revenue requirements. Unless stated otherwise, our approach to establishing the notional revenue requirements is consistent with SDP's position as set out in the October 2016 proposal.

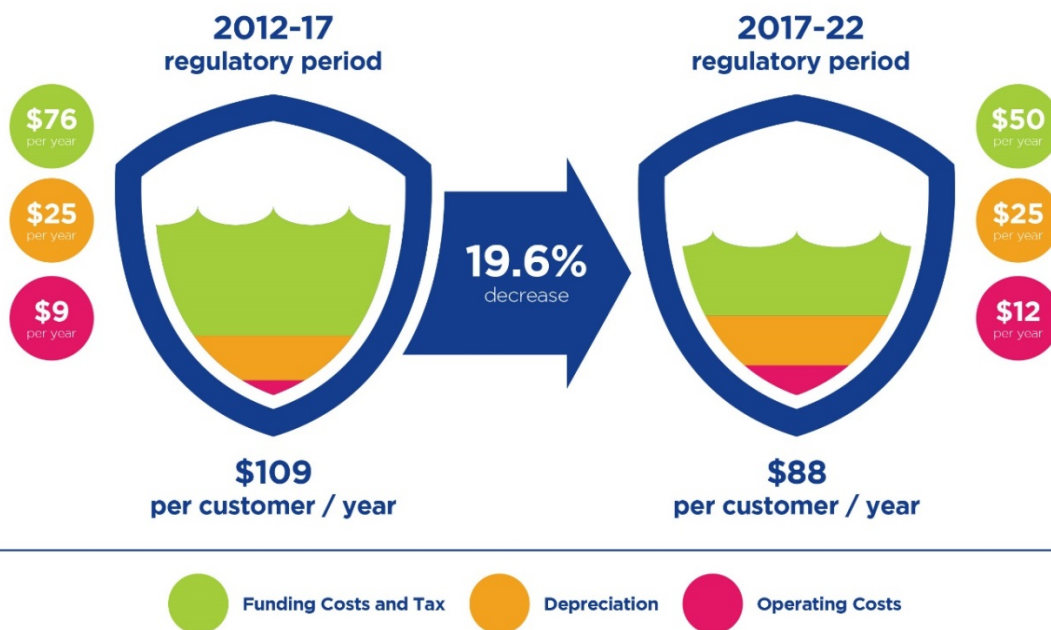
Sections 6 to 9 provide further detail on the key building block inputs for the return on capital; return of capital (depreciation); forecast operating expenditure; forecast tax costs; and other revenue adjustments.

#### 4.1 Notional revenue requirements – water security mode

Our proposed notional revenue requirement for the plant and pipeline in water security mode for the 2017-22 regulatory period is \$866.26m (exclusive of network charges). Figure 4.1 shows that our proposed revenue requirement represents a decrease of 19.6% compared to the approved notional revenue requirement in water security mode for the 2012-17 regulatory period (excluding the impact of inflation), on a cost per customer basis.<sup>45</sup> This decrease in our proposed notional revenue requirement for the plant and pipeline in water security mode for the 2017-22 regulatory period reflects:

- Our funding costs for the 2017-22 regulatory period are lower than the 2012-17 regulatory period (see Section 7.1).
- Our operating expenditure in water security mode for the 2017-22 regulatory period is higher than the 2012-17 regulatory period including a more realistic forecast of operating expenditure that reflects SDP as a stand-alone entity rather than as a subsidiary of SWC (see Section 5.4). Despite this increase, on a cost per customer basis operating expenditure has remained unchanged and the \$3 increase to operating costs per customer shown in Figure 4.1 is entirely driven by the recovery of the EnAM allowance.
- Our capital expenditure for the 2017-22 regulatory period is higher than the 2012-17 regulatory period including necessary maintenance programs required to manage operational risks associated with an extended period of water security mode (see Section 6).

**Figure 4.1: Notional revenue requirement per customer in water security mode— proposed for 2017-22 regulatory period compared with approved for 2012-17 regulatory period (\$2016-17)**



Source: SDP

Note: Total dollars per customer per year (and percentage change) may not add due to rounding. Funding costs includes return on assets, working capital and taxation costs (noting that IPART intends to use a real post-tax WACC for the 2017-22 regulatory period and provide for an explicit tax allowance as a separate cost building block); operating costs includes EnAM allowances.

<sup>45</sup> Figure 4.1 compares the proposed notional revenue requirements for the plant and pipeline in water security mode for the 2017-22 regulatory period with those approved by IPART for the 2012-17 regulatory period on a cost per customer basis. These per customer costs were derived by dividing the building block costs by actual and forecast customer numbers.

Table 4.2 sets out our revised proposed revenue requirement and building block costs for the plant and pipeline in water security mode for the 2017-22 regulatory period (exclusive of network charges), and compares these to our October 2016 proposal and the draft decision. It shows that our proposed notional revenue requirement is:

- \$13.54m more than our October 2016 proposal, reflecting an increase in the funding costs which is partially offset by reductions in forecast operating expenditure (such as the exclusion of the partial plant test and a 0.25% efficiency factor applied to corporate and labour costs)
- \$18.66m more than the notional revenue requirement allowed for under the draft decision, reflecting a higher opening RAB, slightly higher plant forecast operating expenditure and higher depreciation from shorter pipeline asset lives.

**Table 4.2: Proposed notional revenue requirements by building block component for the plant and pipeline in water security mode for the 2017-22 regulatory period (\$2016-17, \$million)**

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
<b>October 2016 proposal</b>						
Return on capital (funding costs)	87.26	85.07	82.91	80.75	78.55	414.54
Return of capital (depreciation)	48.72	48.76	48.80	48.79	48.74	243.80
Forecast operating expenditure	18.80	21.43	21.62	31.24	30.41	123.50
Tax costs (net of imputation)	4.83	5.83	6.68	7.47	8.15	32.96
Working capital	0.77	0.77	0.75	0.76	0.75	3.80
Other revenue adjustments <sup>46</sup>	6.83	6.83	6.83	6.83	6.78	34.12
<b>Total notional revenue requirement</b>	<b>167.22</b>	<b>168.69</b>	<b>167.59</b>	<b>175.85</b>	<b>173.39</b>	<b>852.73</b>
<b>IPART draft decision</b>						
Return on capital (funding costs)	94.00	91.80	89.50	87.20	85.00	447.50
Return of capital (depreciation)	48.60	48.60	48.60	48.70	48.90	243.50
Forecast operating expenditure	17.20	17.20	17.10	16.70	16.50	84.80
Tax costs (net of imputation)	6.00	7.00	7.70	8.60	9.20	38.60
Working capital	0.80	0.80	0.80	0.80	0.80	4.20
Other revenue adjustments <sup>47</sup>	5.90	5.90	5.90	5.80	5.80	29.10
<b>Total notional revenue requirement</b>	<b>172.50</b>	<b>171.30</b>	<b>169.70</b>	<b>167.90</b>	<b>166.30</b>	<b>847.60</b>
<b>Revised proposal</b>						
Return on capital (funding costs)	94.49	92.19	89.91	87.64	85.36	449.59
Return of capital (depreciation)	50.16	50.27	50.29	50.43	50.56	251.71
Forecast operating expenditure	17.47	17.68	17.63	18.07	17.60	88.45
Tax costs (net of imputation)	6.73	7.64	8.43	9.15	9.81	41.76
Working capital	0.88	0.86	0.84	0.83	0.82	4.24
Other revenue adjustments <sup>48</sup>	6.11	6.11	6.11	6.11	6.06	30.52
<b>Total notional revenue requirement</b>	<b>175.84</b>	<b>174.75</b>	<b>173.22</b>	<b>172.24</b>	<b>170.22</b>	<b>866.26</b>

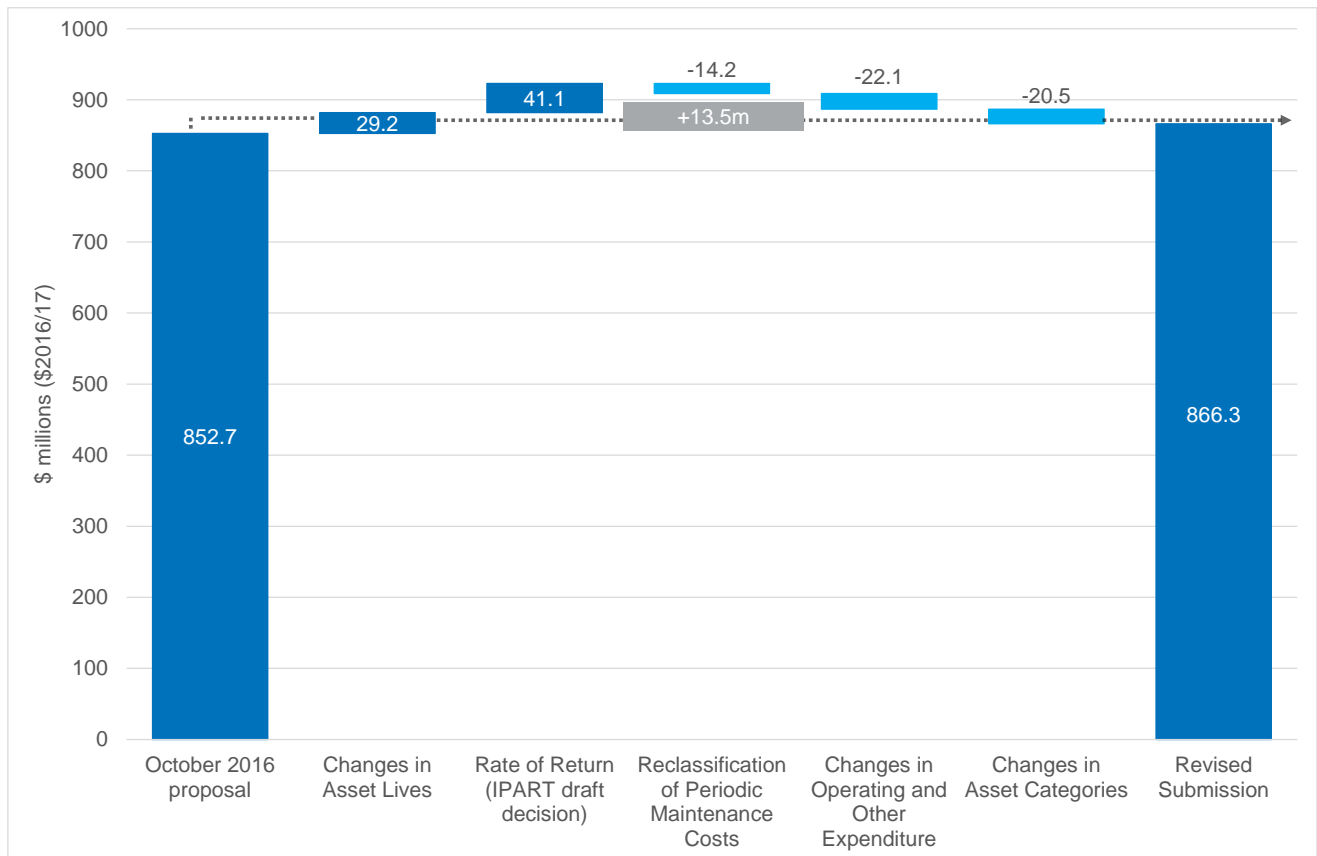
Source: SDP, IPART draft decision

Note: totals may not add due to rounding.

<sup>46</sup> Includes other items including energy adjustment mechanism allowances<sup>47</sup> Includes other items including energy adjustment mechanism allowances<sup>48</sup> Includes other items including energy adjustment mechanism allowances



**Figure 4.2: Comparison of the revised proposed notional revenue requirements with the October 2016 proposal for the plant and pipeline in water security mode for the 2017-22 regulatory period (\$2016-17, \$million)**



Source: SDP Analysis

Appendix 4-1 sets out our proposed detailed notional revenue requirements for all modes.

## 4.2 Notional revenue requirements – full operation mode

Our proposed notional revenue requirement for the plant and pipeline in full operation mode for the 2017-22 regulatory period is \$1,184.55m (exclusive of any restart charges or network charges).

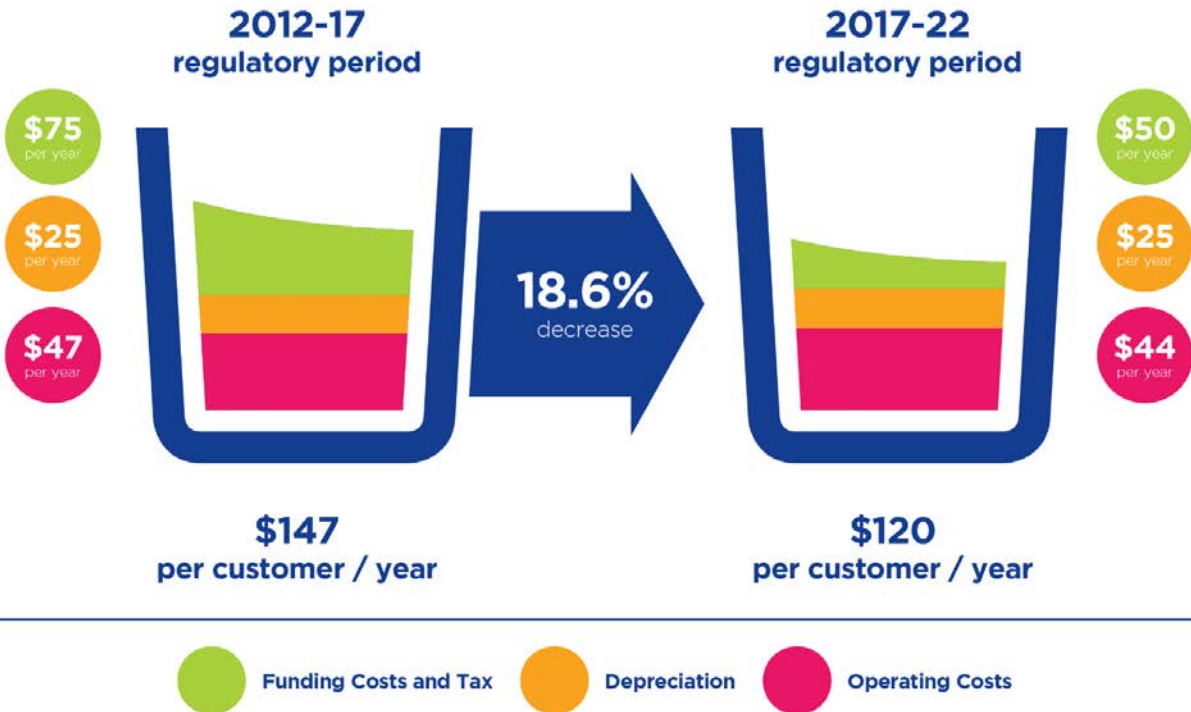
Figure 4.3 shows that our proposed revenue requirement represents a decrease of 18.6% compared to the approved notional revenue requirement in full operation mode for the 2012-17 regulatory period (excluding the impact of inflation), on a cost per customer basis.<sup>49</sup> This decrease in our notional revenue requirement for the plant and pipeline in full operation mode for the 2017-22 regulatory period reflects:

- Our funding costs for the 2017-22 regulatory period are lower than the 2012-17 regulatory period (see Section 7.1).
- Our operating expenditure in full operation mode for the 2017-22 regulatory period is lower reflecting the reclassification of periodic maintenance and membrane replacement, lower chemical and energy costs, partially offset by higher corporate costs for SDP as a stand-alone entity rather than as a subsidiary of SWC (see Section 5.4).

<sup>49</sup> Figure 4.3 compares the proposed notional revenue requirements for the plant and pipeline in full operation mode for the 2017-22 regulatory period with those approved by IPART for the 2012-17 regulatory period on a cost per customer basis. These per customer costs were derived by dividing the building block costs by actual and forecast customer numbers.

- Our capital expenditure for the 2017-22 regulatory period is higher than the 2012-17 regulatory period reflecting the reclassification of periodic maintenance expenditure (see Section 6.1).

**Figure 4.3: Notional revenue requirement per customer in full operation mode— proposed for 2017-22 regulatory period compared with approved for 2012-17 regulatory period (\$2016-17)**



Source: SDP

Note: Total dollars per customer per year (and percentage change) may not add due to rounding. Funding costs includes return on assets, working capital and taxation costs (noting that IPART intends to use a real post-tax WACC for the 2017-22 regulatory period and provide for an explicit tax allowance as a separate cost building block); operating costs includes EnAM allowances.

Table 4.3 sets out our revised proposed revenue requirement and building block costs for the plant and pipeline in full operation mode mode for the 2017-22 regulatory period (exclusive of network charges), and compares these to our October 2016 proposal and the draft decision. It shows that our proposed notional revenue requirement is:

- \$27.52m less than our October 2016 proposal, reflecting lower energy and operating costs, partially offset by an increase in funding costs.
- \$6.15m less than the notional revenue requirement allowed for under the draft decision reflecting materially lower forecast operating expenditure (primarily energy costs) which is partially offset by a higher opening RAB and higher depreciation due to shorter pipeline asset lives.

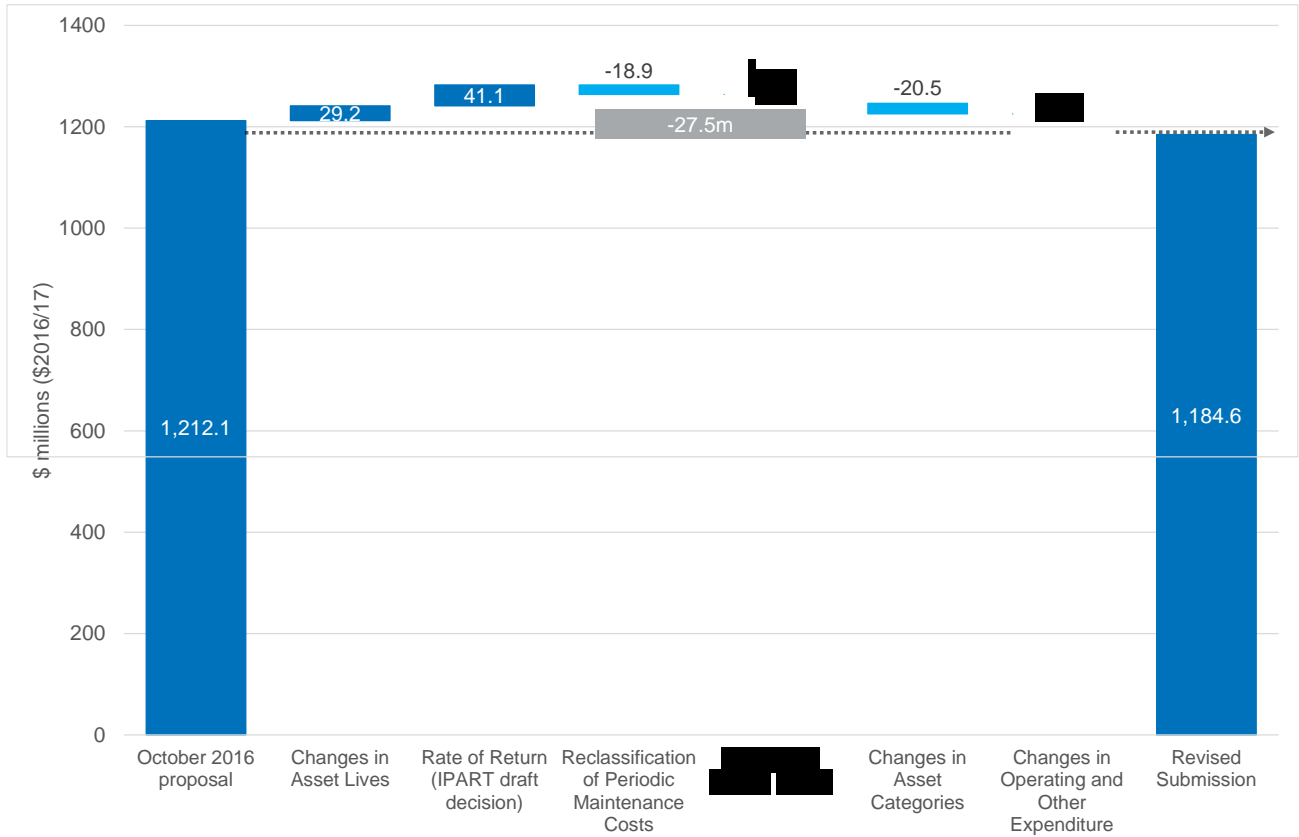
**Table 4.3: Proposed notional revenue requirements by building block component for the plant and pipeline in full operation mode for the 2017-22 regulatory period, exclusive of restart charges (\$2016-17, \$million)**

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
<b>October 2016 proposal</b>						
Return on capital (funding costs)	87.26	85.07	82.91	80.75	78.55	414.54
Return of capital (depreciation)	48.72	48.76	48.80	48.79	48.74	243.80
Forecast operating expenditure	96.23	96.22	96.25	96.70	96.95	482.36
Tax costs (net of imputation)	4.84	5.84	6.69	7.47	8.16	33.00
Working capital	0.91	0.90	0.88	0.88	0.87	4.45
Other revenue adjustments <sup>50</sup>	6.78	6.78	6.78	6.78	6.78	33.92
<b>Total notional revenue requirement</b>	<b>244.75</b>	<b>243.58</b>	<b>242.31</b>	<b>241.38</b>	<b>240.05</b>	<b>1,212.07</b>
<b>IPART draft decision</b>						
Return on capital (funding costs)	94.00	91.80	89.50	87.20	85.00	447.50
Return of capital (depreciation)	48.60	48.60	48.60	48.70	48.90	243.50
Forecast operating expenditure	87.40	86.20	84.90	84.10	84.20	427.10
Tax costs (net of imputation)	6.00	7.00	7.70	8.60	9.20	38.60
Working capital	1.00	1.00	1.00	0.90	0.90	4.90
Other revenue adjustments <sup>51</sup>	5.90	5.90	5.90	5.80	5.80	29.10
<b>Total notional revenue requirement</b>	<b>242.90</b>	<b>240.40</b>	<b>237.70</b>	<b>235.40</b>	<b>234.20</b>	<b>1,190.70</b>
<b>Revised proposal</b>						
Return on capital (funding costs)	94.49	92.19	89.91	87.64	85.36	449.59
Return of capital (depreciation)	50.16	50.27	50.29	50.43	50.56	251.71
Forecast operating expenditure	80.96	81.29	81.30	81.42	81.29	406.26
Tax costs (net of imputation)	6.73	7.65	8.44	9.16	9.82	41.81
Working capital	1.00	0.98	0.97	0.96	0.95	4.86
Other revenue adjustments <sup>52</sup>	6.06	6.06	6.06	6.06	6.06	30.32
<b>Total notional revenue requirement</b>	<b>239.41</b>	<b>238.45</b>	<b>236.97</b>	<b>235.67</b>	<b>234.05</b>	<b>1,184.55</b>

Source: SDP, IPART draft decision

Note: totals may not add due to rounding. Does not include the costs of restarting the plant to return to operating mode.<sup>53</sup><sup>50</sup> Includes other items including energy adjustment mechanism allowances<sup>51</sup> Includes other items including energy adjustment mechanism allowances<sup>52</sup> Includes other items including energy adjustment mechanism allowances<sup>53</sup> If the plant were to return to full operation mode there would also be costs incurred in restarting the plant. These costs would vary depending on which year the restart occurred, primarily reflecting the number of membranes which would need to be

**Figure 4.4: Comparison of the revised proposed notional revenue requirement and the October 2016 submission for the plant and pipeline in full operation mode for the 2017-22 regulatory period (\$2016-17, \$million)**



Source: SDP Analysis

### 4.3 Notional revenue requirements – transition to restart

There are one-off costs associated with transitioning from shutdown to restart.

Table 4.4 sets out our revised proposed revenue requirement for transitioning from water security to full operation mode (restart) for the 2017-22 regulatory period, and compares these to our October 2016 proposal and the draft decision. It shows that our proposed notional revenue requirement is:

- \$23.60m less than our October 2016 proposal, reflecting the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period, contingent on restart.
- \$7.90m more than the notional revenue requirement allowed for under the draft decision primarily reflecting higher energy volumes required during restart (consistent with October 2016 proposal). See Section 5.3.

replaced. Section 10 sets out the proposed prices for transitioning from water security to full operation mode for the 2017-22 regulatory period.

**Table 4.4: Proposed notional revenue requirements transitioning from water security to full operation mode (restart) for the 2017-22 regulatory period (\$2016-17, \$million)**

	2017-18	2018-19	2019-20	2020-21	2021-22
October 2016 proposal	37.27	38.40	39.37	40.23	40.98
IPART draft decision	9.65	9.58	9.5	9.49	9.48
Revised proposal	17.38	17.38	17.38	17.38	17.38

Source: SDP analysis, IPART draft decision.

Note: these costs are one-off costs incurred only when the plant is returning to operating mode following a Water Security shutdown. These costs are not incurred annually.

#### 4.4 Notional revenue requirements – transition to shutdown

There are also one-off costs associated with transitioning from full operation to shutdown modes.

Table 4.5 sets out our revised proposed revenue requirement for transitioning to water security mode (shutdown) for the 2017-22 regulatory period (exclusive of network charges), and compares these to our October 2016 proposal and the draft decision. It shows that our proposed notional revenue requirement of \$1.69 m per event is:

- Consistent with our October 2016 proposal
- Consistent with the draft decision.<sup>54</sup>

**Table 4.5: Operating Expenditure for Transition to a Water Security Shutdown (per transition event) (\$2016-17, \$millions)**

	2017-18	2018-19	2019-20	2020-21	2021-22
October 2016 proposal	1.69	1.69	1.69	1.69	1.69
IPART draft decision	1.69	1.69	1.69	1.69	1.69
Revised proposal	1.69	1.69	1.69	1.69	1.69

Source: SDP analysis, IPART draft decision.

Note: these costs are one-off costs incurred only when the plant is transitioning to a Water Security shutdown. These costs are not incurred annually.

<sup>54</sup> Atkins Cardno reviewed SDP's activities associated with moving the plan from plant operation mode to shutdown and found that most of the costs are associated with flushing and cleaning of the reverse osmosis trains, feed pumps, post-treatment plant and pre-treatment plant, and capping the sea intake and outfall outlets. Atkins Cardno reviewed the input costs related to these activities, and found SDP's proposed costs to be efficient.


## 5. Forecast operating expenditure


**Table 5.1: Overview of our response to the draft decision on forecast operating expenditure**

Our response to the draft decision on forecast operating expenditure	
Operating and maintenance costs	
Partial plant test in water security mode	<p>We accept the draft decision to exclude the partial plant test costs over the 2017-22 regulatory period and have excluded these costs in our revised proposal.</p> <p>However we do not agree with the draft decision finding that replacing the membranes is an efficient alternative to the partial plant test and we maintain that the plant will need testing in future periods, particularly given the:</p> <ul style="list-style-type: none"> <li>• 2017 Metropolitan Water Plan will result in the plant being in full operation less frequently,</li> <li>• Onerous financial penalties imposed if SDP does not attain 100% output within 8 months of entering a drought.</li> </ul>
Periodic plant O&M costs	<p>We accept the draft decision to reclassify all efficient periodic plant O&amp;M costs as capital expenditure for the 2017-22 regulatory period. However, we note this treatment is not consistent with <i>Australian Accounting Standards</i> for the majority of forecast periodic maintenance expenditure.</p> <p>We do not agree with the draft decision to reduce periodic maintenance expenditure in water security and operating mode. Section 6 outlines our revised proposal on forecast capital expenditure over the 2017-22 regulatory period.</p>
Labour and other plant fixed O&M costs in water security mode	<p>We agree with the draft decision to include an ongoing efficiency target to labour and other fixed costs that reflects industry-wide productivity improvements due to technological improvements.</p> <p>However, we do not agree with the draft decision finding that SDP can provide its water security services over the 2017-22 regulatory period with significantly lower levels of staffing (i.e. the basis for the 2.5% per year cumulative efficiency adjustment) given the finding:</p> <ul style="list-style-type: none"> <li>• Is not supported with evidence that SDP base year costs are inefficient (i.e. that there is scope for 'catch-up' efficiencies when compared to other comparable entities operating in similar environments).</li> <li>• Incorrectly assumes that "the likelihood of prolonged water security mode" results in a negative change in labour costs despite the draft decision acknowledging the additional maintenance activity on site as the plant ages.</li> </ul> <p>Our revised proposal includes an ongoing efficiency target of 0.25% consistent with other industry-wide productivity improvements targets used by IPART for frontier companies competing in an open market with strong commercial pressures.</p>
Membrane O&M costs in restart mode	<p>We accept the draft decision:</p> <ul style="list-style-type: none"> <li>• To reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period. However, we note this treatment is not consistent with <i>Australian Accounting Standards</i>.</li> <li>• That the stock of plant membranes will require replacement once only over the 2017-22 regulatory period if SDP transitions to restart following the prolonged period of water security shutdown (i.e. will only be required for the first restart of the plant given current water storages and the changes to the 2017 Metropolitan Water Plan).</li> </ul> <p>Section 6 outlines our revised proposal on forecast capital expenditure over the 2017-22 regulatory period.</p>
Pipeline O&M costs	<p>We accept the draft decision on the efficient pipeline O&amp;M costs over the 2017-22 regulatory period.</p>
Energy costs	



## Our response to the draft decision on forecast operating expenditure

Cost per unit of energy	<p>We do not agree with the draft decision to use a market-based benchmark approach to setting energy costs. This approach:</p> <ul style="list-style-type: none"> <li>• Exposes SDP and its customers to significant price volatility between determinations (see Figure 5.1), highlighted by recent changes in energy market conditions. We note that accounting for updated market conditions materially increases the draft decision / MJA benchmark price in 2017-18 (See Table 5.10).<sup>55</sup></li> <li>• Would result in customers paying materially more in 2017-18 than the energy costs incurred by SDP in providing services, given recent energy market conditions (i.e. the draft decision used forward market prices as at 25 November 2016 and did not incorporate the most up to date market information. Using updated information would further increase the gap between the benchmark energy price and our long-term contract price).<sup>56</sup></li> <li>• Is unlikely to be consistent with SDP being financially indifferent, promote efficient price signals regarding the cost of providing our water security and water supply services nor be in the long-term interests of our customers.</li> </ul> <p>It is well accepted under other regulatory frameworks governing infrastructure providers (rather than IPART's approach to setting regulated retail electricity prices) that market-tested long-term contracting costs can be considered a prudent and efficient cost of procuring energy.</p> <p>Our revised proposal maintains the use of efficient long-term contract costs as the basis for setting energy costs and ensures that our customers pay no more than necessary over the 2017-22 regulatory period. Failing that, IPART should update the benchmark energy price ahead of the 2017 Determination, in line with the approach IPART has adopted for other market based parameters, such as the WACC.</p>	
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Volume of energy	<p>We accept the draft decision on the volume of energy used during water security and full operation mode based on actual energy usage over the relevant period.</p> <p>However, we do not agree with the draft decision on the volume of energy required during restart given:</p> <ul style="list-style-type: none"> <li>• We are concerned that the draft decision to subtract an estimate of the 'variable' component of energy used during restart risks understating again the energy requirements during restart over the 2017-22 regulatory period, as occurred in the 2012 Determination. The cost impact of this decision is approximately [redacted] (\$16-17), if SDP was to restart in 2021/22.</li> <li>• Our October 2016 proposal specifically excluded any energy associated with the production of water given that this should be recovered via a usage charge and therefore there is no duplication in the recovery of energy costs in restart in our proposal.</li> </ul> <p>Our revised proposal maintains the volume of energy in restart submitted in the October 2016 proposal.</p>	
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### Corporate costs

Base year	<p>We accept the draft decision to use a 'base-step-trend' approach to assess the efficient level of corporate costs over the 2017-22 regulatory period. However, the draft decision excludes a number of recurrent and non-recurrent corporate costs that should be included in the expenditure allowance.</p> <p>Our revised proposal adds these recurrent corporate costs to the draft decision's base year corporate costs over the 2017-22 regulatory period.</p>	
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<sup>55</sup> Accounting for forward market prices as at 30 March, rather than 25 November 2016 used in the draft decision and MJA advice.

<sup>56</sup> Forward market prices (particularly for FY17-18) have increased significantly since November 2016, the date used by IPART in establishing the benchmark energy price in its draft decision.

## Our response to the draft decision on forecast operating expenditure

**Efficiency target** We agree with the draft decision to include an ongoing efficiency target to corporate costs that reflects industry-wide productivity improvements due to technological improvements over time.

However, we do not agree with the draft decision finding that:

- An ongoing efficiency target of 0.75% per year is appropriate to SDP's circumstances given this figure (taken from IPART's 2016 SWC Determination) comprises both a 'catch-up' efficiency component of 0.5% and an 'ongoing' efficiency component of 0.25%.
- A 'catch-up' efficiency component is relevant to SDP given that SDP has been subject to an EfAM mechanism and the draft decision does not demonstrate that SDP's base year corporate costs are inefficient when compared to other comparable entities operating in similar environments.

Our revised proposal includes an ongoing efficiency target of 0.25%, consistent with other industry-wide productivity improvement targets used by IPART for frontier companies competing in an open market with strong commercial pressures.



Forecast operating expenditure is one of the building block costs used to calculate the notional revenue requirement (Section 5). This includes forecast operating and maintenance (O&M) expenditure, forecast energy costs, and other operating costs, including corporate costs and insurance.

We must propose the total prudent and efficient operating expenditure required in each year over the 2017-22 regulatory period to provide our services under the MWP as well as our obligations to SWC under the WSA. As our operating expenditure varies depending on our mode of operation, we must propose the operating expenditure required in each operating mode in each year for the 2017-22 regulatory period, and the operating expenditure required to transition between modes.

Section 5.1 provides an overview of our total forecast operating expenditure for the 2017-22 regulatory period for water security and full operation modes, and for transitioning from water security to full operation mode (restart). It also compares these forecasts to our October 2016 proposal and the draft decision.

Section 5.2 to 5.4 detail our forecast operating expenditure for water security, full operation and restart modes across each operating expenditure category.

In our view, IPART's 2017 Determination will promote our customers' long-term interests if it ensures that there is a reasonable opportunity to recover our forecast operating expenditure. Unless stated otherwise, our approach to establishing the forecast operating expenditure is consistent with SDP's position as set out in the October 2016 proposal.

## 5.1 Overview of our total forecast operating expenditure

### 5.1.1 Forecast operating expenditure – water security mode

Our forecast operating expenditure for water security mode is \$88.45m for the 2017-22 regulatory period. The key drivers of the proposed expenditure include:

- Necessary maintenance programs to maintain our ageing assets and manage operational risks associated with an extended period of water security mode to ensure the SDP is able to provide water supply and water security services as envisaged under the MWP
- More realistic operating expenditure including the corporate costs associated with managing SDP as a stand-alone entity, and the administrative compliance costs associated with meeting our relevant regulatory obligations and requirements.

Table 5.2 sets out the forecast operating expenditure for water security mode for the 2017-22 regulatory period and compares these to our October 2016 proposal and the draft decision. It shows that our forecast operating expenditure is:

- \$35.05m less than our October 2016 proposal, reflecting the:
  - Exclusion of the partial plant test costs over the 2017-22 regulatory period, consistent with the draft decision
  - Reclassification of periodic plant O&M costs as capital expenditure for the 2017-22 regulatory period, consistent with the draft decision
  - Reduction in O&M costs associated with the DWPS, consistent with the draft decision
  - Inclusion of an ongoing efficiency target of 0.25% per year on labour and corporate costs
  - Inclusion of additional corporate expenditure associated with the upfront and ongoing costs of undertaking a prudent form of energy trading.
- \$3.67m more than allowed for under the draft decision, reflecting the:
  - Inclusion of a number of recurrent corporate costs —such as professional fees associated with regulatory and legal advice— that the draft decision removed from the base year costs
  - Inclusion of an ongoing efficiency target of 0.25% per year on both labour and corporate costs (rather than the 2.5% per year cumulative efficiency adjustment applied to labour and 0.75% per year applied to corporate costs in the draft decision) — consistent with other industry-wide productivity improvements targets used by IPART for frontier companies competing in an open market with strong commercial pressures
  - Inclusion of additional corporate expenditure associated with membrane testing and the upfront and ongoing costs of undertaking a prudent form of energy trading.

**Table 5.2: Forecast operating expenditure for water security mode for the 2017-22 regulatory period by operating expenditure category (\$2016-17, \$million)**

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
October 2016 proposal	18.80	21.43	21.62	31.24	30.41	123.50
IPART draft decision	17.22	17.20	17.11	16.76	16.49	84.78
Revised proposal	17.47	17.68	17.63	18.07	17.60	88.45

Source: SDP, IPART draft decision

### 5.1.2 Forecast operating expenditure – full operation mode

Our forecast operating expenditure for full operation mode is \$406.26m for the 2017-22 regulatory period. The key drivers of the proposed expenditure include:

- Necessary expenditure requirements such as energy, labour, chemicals used in water production and scheduled and routine maintenance in accordance with best practice asset management.
- More realistic corporate costs associated with managing SDP as a stand-alone entity, and the administrative compliance costs associated with meeting our relevant regulatory obligations and requirements.

Table 5.3 sets out the forecast operating expenditure for full operation mode for the 2017-22 regulatory period and compares these to our October 2016 proposal and the draft decision. It shows that our forecast operating expenditure is:

- \$76.09m less than our October 2016 proposal, reflecting the:
  - Reclassification of periodic plant O&M costs as capital expenditure for the 2017-22 regulatory period, consistent with the draft decision
  - Reductions in variable O&M costs associated with chemicals used in the process of converting seawater to high quality drinking water, consistent with the draft decision.
  - Reductions in energy usage used in the process of converting seawater to high quality drinking water (in line with *actual* usage during the proving period), consistent with the draft decision
  - Reductions in the O&M costs associated with the DWPS, consistent with the draft decision
  - The need for additional Business Interruption (BI) insurance arising from the changes to the abatement mechanism.
  - Inclusion of additional corporate expenditure, offset by an ongoing efficiency target of 0.25% per year.
- \$20.78m less than allowed for under the draft decision, reflecting the:
  - Inclusion of materially lower energy costs—consistent with our efficient long-term contract rather than the draft decision’s benchmark energy price—to ensure that our customers pay no more than necessary over the 2017-22 regulatory period.
  - The need for additional Business Interruption (BI) insurance arising from the changes to the abatement mechanism.
  - Inclusion of a number of additional corporate costs - such as professional fees associated with regulatory and tax advice – that the draft decision removed from base costs.

**Table 5.3: Forecast operating expenditure for full operation mode for the 2017-22 regulatory period by operating expenditure category\* (\$2016-17, \$million)**

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
October 2016 proposal	96.23	96.22	96.25	96.70	96.95	482.36
IPART draft decision	87.44	86.23	84.94	84.16	84.27	427.04
Revised proposal	80.96	81.29	81.30	81.42	81.29	406.26

\*Assumes annual production of 91.3GL in line with plant design.

Source: SDP, IPART draft decision

Note: totals may not add due to rounding.

### 5.1.3 Forecast operating expenditure – restart

Table 5.4 sets out forecast operating expenditure associated with restarting the plant. These are one-off costs associated with the transition from an extended water security shutdown (the current mode of the plant) to full operation mode. It is important to note that the restart would occur in only one of these years, and so these costs are not cumulative across years.

**Table 5.4: Forecast operating expenditure for transitioning from water security to full operation mode (restart) for the 2017-22 regulatory period (\$2016-17, \$million)**

	2017-18	2018-19	2019-20	2020-21	2021-22
October 2016 proposal	37.27	38.40	39.38	40.23	40.98
IPART draft decision	9.65	9.58	9.50	9.49	9.48
Revised proposal	17.38	17.38	17.38	17.38	17.38

Source: SDP, IPART draft decision

Note: these costs are one-off costs incurred only when the plant is returning to full operation mode following a water security shutdown. These costs are not incurred annually.

Our forecast operating expenditure for restart is \$17.38m in all years, which (based on 2021-22) is:

- \$23.60m less than our October 2016 proposal, reflecting the reclassification of membrane replacement costs as contingent capital expenditure for the 2017-22 regulatory period
- \$7.90m more than allowed for under the draft decision reflecting a more realistic estimate of the volume of energy used during restart (consistent with the volume of energy in restart submitted in the October 2016 proposal).

#### 5.1.4 Forecast operating expenditure – shutdown

Table 5.5 sets out forecast operating expenditure associated with transitioning to shutdown. These are one-off costs associated with the transition from full operation to water security mode (shutdown).

**Table 5.5: Forecast operating expenditure for transitioning from full operation to water security mode (shutdown) for the 2017-22 regulatory period (\$2016-17, \$million)**

	2017-18	2018-19	2019-20	2020-21	2021-22
October 2016 proposal	1.69	1.69	1.69	1.69	1.69
IPART draft decision	1.69	1.69	1.69	1.69	1.69
Revised proposal	1.69	1.69	1.69	1.69	1.69

Source: SDP, IPART draft decision

Note: these costs are one-off costs incurred only when the plant is returning to water security mode from full operation mode. These costs are not incurred annually.

Our forecast operating expenditure for shutdown is \$1.69m per shutdown event, which is:

- Consistent with our October 2016 proposal.
- Consistent with the draft decision.

## 5.2 Operating and maintenance cost component of forecast operating expenditure

Table 5.6 compares our forecast O&M costs for the 2017-22 regulatory period with our October 2016 proposal and the draft decision.

**Table 5.6: Comparison of forecast O&M costs over the 2017-22 regulatory period (\$2016-17, \$million)**

[Table redacted]

	October 2016 proposal	IPART draft decision	Revised proposal
Water security mode		41.52	
Full operation mode		142.91	
Transition to full operation mode (restart)*		6.87	
Transition to water security mode (shutdown)	1.69	1.69	1.69

Note: \*This assumed that a transition to full operation mode occurred in Year 5 of the regulatory period.

We are confident that our forecast O&M costs for the 2017-22 regulatory period are the minimum necessary to comply with all relevant regulatory obligations and requirements and to ensure the safety, reliability and responsiveness of our water supply and water security services as envisaged under the 2017 MWP over the 2017-22 regulatory period. These costs are consistent with the costs that would be incurred by a prudent service provider acting efficiently. The underlying prudence and efficiency of the costs associated with our long-term O&M contract was detailed in our October 2016 proposal.

### 5.2.1 Water security mode

Table 5.6 shows that that our forecast O&M costs for water security mode over the 2017-22 regulatory period is [redacted], which is:

- \$35.56m less than our October 2016 proposal, reflecting the:
  - Exclusion of the partial plant test costs over the 2017-22 regulatory period, consistent with the draft decision
  - Reclassification of periodic plant O&M costs as capital expenditure for the 2017-22 regulatory period, consistent with the draft decision
  - Inclusion of an ongoing efficiency target of 0.25% per year on labour and other fixed costs
  - Reductions in O&M costs associated with the DWPS, consistent with the draft decision
- [redacted] more than allowed for under the draft decision, reflecting the:
  - Inclusion of an ongoing efficiency target of 0.25% per year on labour and other fixed costs (rather than the 2.5% per year cumulative efficiency adjustment applied to labour and other fixed costs in the draft determination) – consistent with other industry-wide productivity improvements targets used by IPART for frontier companies competing in an open market with strong commercial pressures.

The sections below explain each of the key drivers of forecast O&M costs in water security mode and compares these to our October 2016 proposal and the draft decision.

#### Exclusion of the partial plant test costs over the 2017-22 period

Our October 2016 proposal included a partial test of the plant at an estimated cost of \$17.5m.<sup>57</sup> The underlying objective of the partial plant test is to mitigate two key water security risks for customers, namely the ability to restart and maintain supply after restart following an extended period of water security

<sup>57</sup> The proposed partial plant test approximates full operation conditions without actually being a restart. It will involve loading the entire plant (12 first pass trains and 6 second pass trains operating simultaneously as they would if the plant was in full production), providing valuable information on plant performance, capacity and reliability. During the test the plant would produce permeate-quality water (rather than drinking water which would require additional processes and costs including mineralisation and adding fluoride). The process of converting permeate quality water to drinking water quality is considered to be a standard and low-risk process which does not require testing.



shutdown for SDP. Our October 2016 proposal detailed these risks and the options available to address these risks. It highlighted that the plant test as the lowest cost strategic option to address these risks given that the extended period in water security mode is unprecedented amongst large-scale desalination plants across the world.

The draft decision is to exclude the costs associated with the partial plant test on the basis of Atkins Cardno's recommendation that:

- An alternative and efficient option is to replace all the RO membranes on full restart.<sup>58</sup>
- An 8-month period to restart the plant provides SDP with sufficient time to procure new membranes and address any residual vulnerability in the plant and equipment.<sup>59</sup>
- Continuing to apply good asset management processes should reduce the risk of any major issues on restart<sup>60</sup>

We accept the draft decision to exclude the partial plant test costs over the 2017-22 regulatory period and have excluded these costs in our revised proposal. However we do not agree with the Atkins Cardno's recommendation and draft decision finding that replacing the membranes is an efficient alternative to the partial plant test and we maintain that the plant will need testing in future periods, particularly given the:

- 2017 MWP will result in the plant being in full operation less frequently (i.e. SDP will be in extended periods of water security mode)
- Financial penalties under the abatement mechanism if SDP does not attain 100% output within 8 months of entering a drought.

Recent experience with the Wonthaggi desalination plant in Victoria highlights the potential issues that can be encountered when restarting a desalination plant after a significant period of shutdown. Plant testing would allow the testing of integrated civil, mechanical and electrical assets, in addition to the membranes. Some critical pieces of equipment can have ordering lead times of over 6 months and therefore it is essential for any issues to be identified prior to the next restart to ensure water security.

Moreover, SDP notes that the Victorian Government has announced that it intends to continue ordering water from the Wonthaggi Plant for the next three years to reduce the risk of further technical problems at the plant. SDP is now the only large desalination plant in Australia in a state of extended shutdown. As detailed in our October 2016 proposal, SDP must carefully manage the risks to water security arising from this unprecedented form of plant shutdown.

### **Reclassification of periodic plant O&M costs as capital expenditure for the 2017-22 regulatory period**

Our October 2016 proposal also included additional maintenance to address some of the key operational risks following an extended period of water security shutdown. Our October 2016 proposal detailed these risks and the options available to address these risks. It highlighted that in the absence of restarting the plant additional preventative and corrective maintenance is required to overhaul and where necessary, replace some of the originally installed assets to address key operational risks. Our October 2016 proposal was to treat this maintenance as operating expenditure consistent with the 2012 Determination.

The draft decision is to reclassify efficient periodic plant O&M costs as capital expenditure for the 2017-22 regulatory period on the basis of Atkins Cardno's recommendation that these maintenance costs:

<sup>58</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p9.

<sup>59</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p42.

<sup>60</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p39.

- Relate to significant expenditures involving replacement, renewal and/or refurbishment of items which are proposed to take place on a cycle of multiple years
- Generate benefits over more than one year.<sup>61</sup>

We accept the draft decision to reclassify all efficient periodic plant O&M costs as capital expenditure for the 2017-22 regulatory period. However, we note that:

- The level of capital expenditure allowed in the draft decision is not consistent with the level of preventative and corrective maintenance expenditure required to provide our services under the MWP as well as our obligations to SWC under the WSA. Section 6 outlines our revised proposal on forecast capital expenditure over the 2017-22 regulatory period.
- This treatment is not consistent with *Australian Accounting Standards*.

### Applying efficiency targets to labour and other fixed costs in water security mode

Our October 2016 proposal included the prudent and efficient costs associated with labour and other fixed costs in operating and maintaining the plant in water security mode.

The draft decision is to reduce the allowance for labour and other fixed costs in water security mode by applying a 2.5% per year cumulative efficiency adjustment from year 2 to 5 of the 2017 determination period. The draft decision is based on Atkins Cardno's recommendations that the management resources SDP has in place and the likelihood of a prolonged water security mode mean there is the potential:

- For a reduction in staffing levels equivalent to a 2.5% per annum efficiency over the period from year 2 to 5 over the 2017-22 regulatory period
- To achieve greater productivity through the application of innovation and new technology.

We agree with the draft decision to:

- Assess the levels of recurrent operating expenditure related to labour and other fixed costs using a 'base-step-trend' approach, consistent with other regulatory frameworks
- Incorporate an ongoing efficiency target.

However we do not agree with the Atkins Cardno's recommendations, specifically its application of its 'base-step-trend' approach including:

- The negative 'step change' in labour costs that Atkins Cardno's assumes will occur given "the likelihood of a prolonged Water Security Mode"<sup>62</sup>. The basis of this assumption is unclear and appears inconsistent with the draft decision's acknowledgment of the additional maintenance activity on site as the plant ages.
- The productivity or efficiency target of 2.5% per year:
  - Appears to include a 'catch-up' and 'ongoing' efficiency target component; however, unlike in the recent SWC decision<sup>63</sup> and consistent with good regulatory practice this distinction is not made clear (see Box 2).
  - Is not supported with evidence that there is scope for 'catch-up' efficiencies (i.e. that SDP base year costs are inefficient when compared to other comparable entities operating in similar

<sup>61</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p52.

<sup>62</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p38.

<sup>63</sup> In its SWC report, Atkins notes that "We assumed a continuing efficiency of 0.25% per annum to reflect overall technological improvements and innovation that a frontier company competing in an open market with strong commercial pressures, would be implementing." Atkins Cardno, Sydney Water Corporation - Expenditure Review, December 2015, p16.

environments) given that Atkins Cardno has “not found any direct comparisons with other desalination plants of similar size in a non-operational mode.”<sup>64</sup>

- Is not supported with evidence that any ‘ongoing’ efficiency targets are consistent with other industry-wide productivity improvements targets used by IPART for frontier companies competing in an open market with strong commercial pressures.
- Does not consider other cost escalations that may offset broader industry-wide productivity improvements (say where Wage Price Index > CPI)
- The incorrect assumption that the perceived ineffectiveness of the incentive mechanisms in the broader regulatory framework requires Atkins Cardno’s to build in “some efficiency targets that SDP should achieve and indeed could out-perform through focused management action”<sup>65</sup>

### Box 2: Summary of distinction between catch-up efficiency and continuing efficiency

Good regulatory practice is to separate efficiency targets into two elements:

- *Catch-up* efficiency targets to capture the extent to which the current performance of a company lags behind the efficiency levels of comparator companies and must make efficiency improvements to ‘catch up’ to the efficiency frontier or best practice. Many regulators include any catch-up efficiency component—determined through an analysis of performance against comparator companies i.e. benchmarking—by adjusting the base year allowance.
- *Continuing* efficiency targets capture the extent to which a company may be able to achieve productivity improvements in the future (over and above its scope for static efficiency gains), owing to technological improvements over time or a general ‘frontier shift’ the industry may achieve. Many regulators include these ongoing or continuing efficiency targets in the ‘trend’ component of any ‘base, step, trend’ methodology for setting opex allowances).

Our revised proposal includes an ongoing efficiency target of 0.25% per year from 2018/19 consistent with other industry-wide productivity improvements targets used by IPART (such as for SWC) for frontier companies competing in an open market with strong commercial pressures.

#### 5.2.2 Full operation mode

Our forecast O&M costs for full operation mode are [redacted] over the 2017-22 regulatory period. The key drivers of this expenditure include:

- Necessary expenditure requirements such as additional scheduled and preventative maintenance associated with the age of our assets in accordance with best practice asset management.
- The cost of labour and chemicals used in the process of converting seawater to high quality drinking water.

Table 5.6 shows that that our forecast O&M costs for full operation mode are:

- \$58.98m less than our October 2016 proposal, reflecting the:

<sup>64</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p38.

<sup>65</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p7.

- Reclassification of periodic plant O&M costs as capital expenditure for the 2017-22 regulatory period, consistent with the draft decision
- Reductions in variable O&M costs associated with chemicals and energy consumption used in the process of converting seawater to high quality drinking water, consistent with the draft decision
- Reductions in O&M costs associated with the DWPS, consistent with the draft decision.
- [redacted]

We accept the draft decision forecast O&M costs for full operation mode expenditure for the 2017-22 regulatory period, including the reductions to variable costs on the basis that there is no current operational data to verify the volume of chemicals that will be required in production. However, we note that:

- The draft decision to reclassify all periodic plant O&M costs as capital expenditure for the 2017-22 regulatory period is not consistent with *Australian Accounting Standards*.
- The level of capital expenditure allowed in the draft decision is not consistent with the level of preventative and corrective maintenance expenditure required to provide our services under the MWP as well as our obligations to SWC under the WSA. Section 6 outlines our revised proposal on forecast capital expenditure over the 2017-22 regulatory period.

### 5.2.3 Restart operating and maintenance costs

Our forecast O&M costs for transitioning to restart from water security mode are [redacted] per event over the 2017-22 regulatory period.

Table 5.6 shows that that our forecast O&M costs for restart from water security mode (assuming this occurs in 2021-22) are:

- \$23.60m less than our October 2016 proposal, reflecting the reclassification of membrane replacement costs as capital expenditure for the 2017-22 regulatory period, consistent with the draft decision (based on restart in 2021/22).
- Equal to the allowance under the draft decision.

The section below explains the drivers of the forecast O&M costs for a (one-off) restart of the plant.

#### Reclassification of membrane replacement costs as capital expenditure for the 2017-22 regulatory period

Our October 2016 proposal included the cost of membrane replacement when the plant is restarting from water security mode during the 2017-22 regulatory period— estimated to be \$19.8m to \$23.5m (depending on the restart date). This strategy for membrane replacement was:

- Adopted as the most cost-effective solution after careful consideration of a number of alternative options
- Designed to ensure that customers only paid for these costs when the plant was restarted and new membranes were required.

The draft decision is:

- Not to include membrane replacement costs as part of the forecast O&M costs during restart
- Reclassify membrane replacement costs as capital expenditure for the 2017-22 regulatory period, and to set the efficient capital expenditure at \$30m for a full membrane replacement on the first restart in the 2017-22 regulatory period

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

The draft decision is based on Atkins Cardno's recommendation that:

- SDP's proposed membrane replacement program is inefficient and that an alternative and efficient option is to replace all the RO membranes on full restart<sup>66</sup>
- The efficient costs of a full membrane replacement can be calculated based on a 'supplied to SDP's site' benchmark unit cost for membranes, and applied a further allowance for installation, spares, and membrane disposal<sup>67</sup>
- These costs be capitalised as they generate benefits over more than a year.<sup>68</sup>

We accept the draft decision to:

- To reclassify all efficient membrane replacement cost allowances as capital expenditure for the 2017-22 regulatory period. However, we note this:
  - Treatment is not consistent with *Australian Accounting Standards*
  - Requires the inclusion of tax costs in the membrane service charge (See Section 8.2).
- Replace the stock of plant membranes once over the 2017-22 regulatory period if SDP transitions to restart following the prolonged period of water security shutdown (i.e. will only be required for the first restart of the plant given current water storages and the changes to the 2017 MWP).

#### 5.2.4 Shutdown operating and maintenance costs

Our forecast O&M costs for transitioning from full operation mode (assuming this occurs in 2021-22) are \$1.69m over the 2017-22 regulatory period. The key drivers are preserving membranes, flushing the plant and demobilisation.

Table 5.6 shows that our forecast O&M costs for shutdown from full operation mode (assuming this occurs in 2021-22) are:

- Consistent with our October 2016 proposal.
- Consistent with the allowance under the draft decision.

### 5.3 Energy cost component of forecast operating expenditure

Table 5.7 compares the forecast energy costs over the 2017-22 regulatory period with our October 2016 proposal and the draft decision.

**Table 5.7: Comparison of forecast energy costs over the 2017-22 regulatory periods (\$2016-17, \$million)**

[Table redacted]

	October 2016 proposal	IPART draft decision
Water security mode		3.68

<sup>66</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p66.

<sup>67</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p66.

<sup>68</sup> Atkins Cardno, Expenditure Review – SDP, February 2017, p67.

	October 2016 proposal	IPART draft decision
Full operation mode		240.30
Transition to full operation mode from water security (restart)*		2.61

Source: SDP, IPART draft decision

Note: Cost per event.

Our forecast of energy costs consists of:

- The efficient cost or price per unit of energy
- The volume of energy required in each operating mode

Table 5.8 and Table 5.9 compare the forecast cost per unit of energy and volume of energy used in each operating mode over the 2017-22 regulatory period, with our October 2016 proposal and the draft decision.

**Table 5.8: Comparison of the forecast cost price per unit of energy (excluding network charges) (\$/MWh, \$2016-17)**

[Table redacted]

	2017-18	2018-19	2019-20	2020-21	2021-22
October 2016 proposal					
IPART draft decision*	153.15	148.95	144.74	144.09	143.79
Revised proposal					

Source: SDP, IPART draft decision

Note: \* IPART draft decision for water security mode



**Table 5.9: Comparison of the forecast volume of energy used by operating mode (MWh per year)**

	2017-18	2018-19	2019-20	2020-21	2021-22
<b>October 2016 proposal</b>					
Water security	5,000	5,000	5,014	5,000	5,000
Full operation	354,871	354,871	355,844	354,871	354,871
Transition to restart*	79,652	79,652	79,652	79,652	79,652
<b>IPART draft decision</b>					
Water security	5,000	5,000	5,014	5,000	5,000
Full operation	328,500	328,500	329,400	328,500	328,500
Transition to restart	18,260	18,260	18,260	18,260	18,260
<b>Revised proposal</b>					
Water security	5,000	5,000	5,014	5,000	5,000
Full operation	328,500	328,500	329,400	328,500	328,500
Transition to restart*	79,652	79,652	79,652	79,652	79,652

Source: SDP, IPART draft decision

Note: \*Transition to restart energy volumes occur once only per restart (i.e. are not recurrent annual volumes). Transition to restart energy costs reflect energy consumed during the first four months of restarting the plant and exclude costs associated with energy used in the production of water which is supplied to customers.

We are confident that our forecast energy costs for the 2017-22 regulatory period are consistent with the costs that incurred by a prudent service provider acting efficiently. As required under the planning consent conditions for the plant<sup>69</sup>, SDP is powered 100% from renewable energy. Consequently, our forecast energy costs include the costs of operating within this framework.

### 5.3.1 SDP October 2016 proposal

In terms of the cost per unit of energy, our October 2016 proposal reflected SDP's contract prices, which include all of the costs of the different products and services that are bundled together to make up the supply of energy to an efficient and prudent operator of the SDP, including:

- Sourcing energy requirements from renewable energy under the planning conditions for the plant;
- Complying with relevant energy savings schemes; and
- The costs associated with arranging electricity supply and managing the risks associated with electricity supply (which include retail operating costs and a retail margin).

The contract prices (and other terms and conditions in the contract) are the outcome of a competitive tender process and in our view provide a relevant measure of the efficient costs of procuring energy services. The underlying prudence and efficiency of the costs associated with our contracts with Infigen are detailed in our October 2016 proposal.

Our October 2016 proposal highlighted that:

<sup>69</sup> Project Approval issued pursuant to Section 75J of the *Environmental Planning and Assessment Act 1979*. The planning conditions also require SDP to have a framework for considering and managing a range of factors including additionality, certainty, flexibility and adaptability in the renewable energy supply. C

- Long-term contracts procured through competitive tendering processes such as the Electricity Supply Agreement (**ESA**) and REC Supply Agreement (**RSA**) should form the basis for SDP's energy cost allowance, consistent with other regulatory precedents.
- Long-term contracts also ensure that SWC and customers are not required to manage year-on-year volatility in our energy costs.
- The proposed cost per unit of energy compares favourably with other LRMC and market benchmarks that IPART has previously used in estimating energy costs.

In terms of the volume of energy, our October 2016 proposal reflected:

- Actual usage during the 2012 Determination period for water security mode
- The allowed variable energy volume in the O&M Contract (assuming the plant is operating at 100%) for full operation mode, plus an allowance for energy consumption at the DWPS
- Estimates of energy used during restart mode, with these costs not accounted for in the 2012 Determination.

### 5.3.2 IPART draft decision

In terms of the costs per unit of energy, the draft decision is to set energy cost allowances or benchmark energy unit prices for three modes of operation that:

- Are based on market-based estimates for the three modes of operation, as at November 2016
- Include the costs of:
  - Energy
  - Meeting renewable energy and energy savings scheme obligations
  - Arranging electricity supply and managing the risks associated with electricity supply (retail margin)
  - Other market fees and charges (such as AEMO market fees and ancillary services)
  - Energy losses

The draft decision notes that this approach:

- Is consistent with IPART's 2012 Determination to set energy cost allowances based on an efficient benchmark, providing SDP with incentives to prudently and efficiently manage its actual energy costs
- Would achieve an efficient allocation of risk between SDP and customers
- Better reflects the market price of energy over time such that customers can expect to pay the efficient market price of energy required to efficiently run the plant
- Allows SDP to keep any benefit it is able to generate by 'beating' the benchmark energy unit price

In terms of the volume of energy, the draft decision is to set benchmark energy volumes for three modes of operation including basing these benchmark volumes for:

- Water security mode on with *actual* usage during the 2012 Determination period (i.e. from June 2012)
- Full operation mode on *actual* usage during the plant's proving period after construction (for the two years before June 2012)
- Transition to restart mode on Atkin's advice of 71,000 MWh included for restart, but subtracting IPART's estimate of 52,740 MWh which the draft decision states relates to the production and supply of 15,000 ML of desalinated water during restart.

### 5.3.3 SDP revised proposal

In terms of the **cost per unit of energy**, we do not agree with the draft decision to use a market-based benchmark approach given that this approach:

Exposes SDP and its customers to significant price volatility between determinations (see Figure 5.1), highlighted by recent energy market conditions. We note that accounting for updated market conditions materially increases the draft decision / MJA benchmark price in 2017-18 (See Table 5.10).<sup>70</sup>

- Would result in customers paying significantly more than the energy costs incurred by SDP in providing services over the 2017-22 regulatory period. Figure 5.1 shows that updating the benchmark unit price to reflect recent market conditions (as at 30 March 2017) would further increase the gap between the benchmark energy price and our long-term contract price.
- Is unlikely to be consistent with SDP being financially indifferent, promote efficient price signals regarding the cost of providing our water security and water supply services nor be in the long-term interests of our customers.
- May not result in customers paying “the efficient market price of energy required to efficiently run the plant” given that there is potential for actual market prices to depart significantly from the benchmark unit price within the 5-year determination period.<sup>71</sup> Figure 5.1 shows that market prices can be highly volatile and that estimates of market prices can quickly become out of date.

Our revised proposal maintains the use of efficient long-term contract costs as the basis for setting energy costs and ensures that our customers pay no more than necessary over the 2017-22 regulatory period. It is well accepted under other regulatory frameworks governing *infrastructure providers* (rather than IPART’s approach to setting regulated retail electricity prices) that market-tested long-term contracting costs can be considered a prudent and efficient cost of procuring services.<sup>72</sup>

If IPART chooses retain the use of the benchmark approach for energy in the final decision, then it should update the benchmark price using the latest market conditions in line with the approach IPART uses for other market based parameters, such as the rate of return.<sup>73</sup>

<sup>70</sup> Accounting for forward market prices as at 30 March, rather than 25 November 2016 used in the draft decision and MJA advice.

<sup>71</sup> While IPART’s 2012 Determination was to set energy cost allowances based on an efficient benchmark, this benchmark was based on an LRMC estimate rather than a market-based estimate.

<sup>72</sup> For example, the ESCV in its draft decision for the 2013-18 Victorian metropolitan water price determination stated that “*The Commission has not undertaken an efficiency review of Melbourne Water’s forecast desalination security payments nor does it intend to do so. The Partnerships Victoria process that led to the desalination plant public-private (PPP) seeks to ensure issues such as value for money are achieved through a competitive tendering process. The Commission therefore accepts that Melbourne Water’s overall desalination security payments will reflect the outcome of an efficient procurement processes. In this sense, the Commission accepts that Melbourne Water’s desalination security payments reflect an efficient level of expenditure*”. ESC, Price Review 2013: Greater Metropolitan Water Businesses – Draft decision, April 2013, p49.

<sup>73</sup> IPART’s approach to setting market-based parameters (such as key rate of return parameters) is to use the most recent market information available at the time of the decision. For example, the draft decision notes that “*SDP proposed a WACC of around 4.5% based on our biannual update from August 2016. Since then, several key WACC parameters have increased to reflect current market conditions.*” IPART, Sydney Desalination Plant Pty Ltd Review of Prices from 1 July 2017 to June 2022: Draft Report, March 2017, p95. Similarly, in its 2010 and 2013 retail electricity determinations, IPART used the most recent market information when setting energy cost allowances as part of its approach to setting regulated retail electricity prices.

**Table 5.10: Updating the draft decision and Marsden Jacob's benchmark price to account for updated market conditions (\$/MWh, \$2015-16\*)**

	2017-18	2018-19	2019-20	2020-21	2021-22
<i>Draft decision / MJA benchmark price (full operation mode)</i>	152.43	148.23	144.02	143.38	143.07
Black energy (updated)	\$112.57	\$87.37	\$78.95	\$59.69	\$61.12
LGCs	77.06	75.47	73.63	71.84	70.08
STC	3.38	3.24	3.24	3.24	3.24
Operating costs and retail margin	5.00	5.00	5.00	5.00	5.00
Metering	0.01	0.01	0.01	0.01	0.01
Ancillary services	0.25	0.25	0.25	0.25	0.25
Market fees	0.30	0.30	0.30	0.30	0.30
ESS	1.94	2.06	2.13	2.13	2.13
Losses	0.98	0.94	0.90	0.92	0.94
<b>Total</b>	<b>201.49</b>	<b>\$174.64</b>	<b>\$164.41</b>	<b>\$143.38</b>	<b>\$143.07</b>
<b>Increase in benchmark price</b>	<b>49.06</b>	<b>\$26.41</b>	<b>\$20.39</b>		

Source: IPART draft decision; Marsden Jacob, Energy Review – SDP, February 2017, p46; SDP Analysis

Note: Black energy component has been updated to reflect ASX Energy forward contract data (implied FY strips NSW) as at 30 March 2017; totals may not add due to rounding. \* This table uses \$2015-16 consistent with the MJA report, however we note that IPART (Table 6.3) has used the same figures but indicates they are \$2016-17.

**Figure 5.1: Comparison of SDP contract prices with equivalent IPART benchmarks (\$ per MWh, \$2016-17)**

[Redacted]

In terms of **the volume of energy**, we accept the draft decision on the benchmark volume of energy used during water security and full operation mode. Our revised proposal is consistent with the draft decision and based on *actual* usage over the 2012-17 regulatory period and over the proving period respectively given:

- The absence of any current operational data; and
- The draft decision to include capital expenditure for a full set of membranes when the plant next restarts.

However, we do not agree with the draft decision on the benchmark volume of energy used during the transition to restart. The benchmark volume of energy used during restart included in our October 2016 proposal was developed with our operator and specifically excludes any energy associated with the production of water given that the cost of this water will be appropriately recovered via a usage charge. We are concerned that the draft decision to subtract an estimate of the 'variable' component of energy used during restart risks the 2017 Determination again understating the energy requirements during restart over the 2017-22 regulatory period, as occurred in the 2012 Determination.

Our revised proposal maintains the volume of energy in restart submitted in the October 2016 proposal.

## 5.4 Other operating cost component of forecast operating expenditure

Table 5.11 compares the forecast of other operating costs over the 2017-22 regulatory period with our October 2016 proposal and the draft decision.

**Table 5.11: Comparison of forecast other operating costs over the 2017-22 regulatory period (\$2016-17, \$million)**

	October 2016 proposal	IPART draft decision	Revised proposal
Water security mode	41.98	39.58	42.47
Full operation mode	46.19	43.83	46.49

Source: SDP, IPART draft decision

We are confident that our forecast of other operating costs for the 2017-22 regulatory period are the minimum necessary to comply with all relevant regulatory obligations and requirements and to ensure the safety, reliability and responsiveness of our water supply and water security services as envisaged under the MWP over the 2017-22 regulatory period. These costs are consistent with the costs that would be incurred by a prudent service provider acting efficiently.

### 5.4.1 Water security mode

Our forecast of other operating costs for water security mode are \$42.47m over the 2017-22 regulatory period. Table 5.11 shows that that our forecast of other operating costs for water security mode are:

- \$0.49m more than our October 2016 proposal, reflecting:
  - Inclusion of membrane testing costs and additional corporate expenditure associated with the upfront and ongoing costs of undertaking a prudent form of energy trading, which is partially offset by;
  - Inclusion of an ongoing efficiency target of 0.25% per year on corporate costs consistent with other industry-wide productivity improvements targets used by IPART for frontier companies competing in an open market with strong commercial pressures
- \$2.89m more than allowed for under the draft decision, reflecting the:
  - Inclusion of the \$0.15m per year associated with the operating costs of the membrane testing kit. These costs include labour, energy and the analysis of the results.
  - Inclusion of corporate costs —such as professional fees associated with regulatory and tax advice— that the draft decision removed from the base year costs. Although the draft decision did add \$0.5m to base year costs for the expenditure associated with the 2022 Determination of SDP's prices, this amount is well below the costs incurred by SDP in participating in the review process.<sup>74</sup>
  - Inclusion of an ongoing efficiency target of 0.25% per year on corporate costs (rather than 0.75% per year applied to corporate costs in the draft decision).
  - Inclusion of additional corporate expenditure associated with the upfront and ongoing costs of undertaking a prudent form of energy trading.

<sup>74</sup> Given the cyclical nature of regulatory price review processes, SDP efficiently utilises external specialist but temporary resources rather than maintaining a permanent regulatory team as part of its base costs.

## Corporate costs required to manage SDP as a stand-alone business

Our October 2016 proposal included the corporate costs required to manage SDP as a stand-alone entity rather than as a subsidiary of SWC, and provided detail on the nature of the activities and costs associated with being a stand-alone business. IPART noted in its Issues Paper that some of the allowances IPART set in the 2012 Determination may no longer represent the efficient costs of SDP's operation, particularly with respect to the allocation of corporate overheads<sup>75</sup>.

Our October 2016 proposal also noted that indicative comparisons of SDP's corporate costs with other regulated water businesses in NSW suggest that SDP's corporate costs relative to measures such as RAB and annual revenue requirement are low, recognising the inherent limitations of such benchmarking.

The draft decision is to reduce the corporate costs proposed by SDP by \$2.4m on the basis of Atkins Cardno's recommendation that:

- Use of 'base, step, trend' is an appropriate way to set corporate costs that are largely recurrent over the 2017-22 regulatory period
- The 2016-17 actuals less one-off costs (such as professional fees) equivalent to \$8.0m should be used as the base year
- An ongoing efficiency target of 0.75% per year should be applied over the 2017-22 regulatory period.

We agree with the draft decision to:

- Assess the levels of recurrent corporate costs using a 'base-step-trend' approach, consistent with other regulatory frameworks
- Use 2016-17 actuals less genuine one-off costs as the base year
- Incorporate an ongoing efficiency target

However, we do not agree with the Atkins Cardno's recommendations, specifically its application of its 'base-step-trend' approach including:

- The removal of a number of one-off costs (such as professional fees) given some of these are recurrent over the regulatory period
- The productivity or efficiency target of 0.75% per year given that:
  - It appears this includes a 'catch-up' efficiency component of 0.5% and 'ongoing' efficiency component of 0.25%. In its advice to IPART in the SWC final decision Atkins Cardno notes that the 0.75% per year efficiency target is a "combined continuing and catch-up efficiency" target.<sup>76</sup>
  - A catch-up efficiency target of 0.5% per annum determined for Sydney Water and Bristol water cannot be mechanically applied to SDP—in the absence of any evidence on the scope for SDP to make catch-up efficiencies—given:
    - It is not reasonable to expect a bulk water supplier like SDP to derive the same catch-up efficiency savings as an established water distribution network. SDP is a lean, recently established business which has efficiently outsourced many corporate functions. It does not have the legacy inefficiencies often associated with mature organisations that have established systems, processes and organisational structures.
    - It is not reasonable to apply efficiency targets that were determined for total opex in relation to Sydney Water and Bristol Water to SDP's corporate costs alone.

<sup>75</sup> IPART (2016), 'Review of prices for Sydney Desalination Plant Pty Ltd From 1 July 2017', August, Pp 55.

<sup>76</sup> Atkins Cardo, Sydney Water Corporation - Expenditure Review, December 2015, p17.



- Overseas firms such as in the UK are not a relevant comparator for SDP.<sup>77</sup>

For these reasons, the efficiency target of 0.75% in the draft determination is not appropriate.

Our revised proposal includes an ongoing efficiency target of 0.25% per year consistent with other industry-wide productivity improvements targets used by IPART (such as for SWC) for frontier companies competing in an open market with strong commercial pressures. Our revised proposal also includes an additional cost of \$0.75m over 2020/21 and 2012/22 reflecting the costs of obtaining short term resources associated with the IPART's 2022 Determination of SDP's prices. Unlike other regulated businesses, SDP efficiently retains minimal ongoing regulatory resources as part of its base costs. This means it incurs significant additional costs in scaling up resources for regulatory price determinations and other reviews and these costs should be reflected in SDP's efficient costs in line with the "base, step, trend" methodology.

#### 5.4.2 Full operation mode

Our forecast of other operating costs for full operation mode are \$46.49m over the 2017-22 regulatory period.

Table 5.11 shows that that our forecast of other operating costs for water security mode are:

- \$0.3m more than our October 2016 proposal, reflecting:
  - Higher insurance premiums—including BI insurance premiums required to manage the risks associated with the changes to the abatement mechanism (See Section 3.1 and Appendix 3-1)
  - Inclusion of a number of additional corporate costs—such as professional fees associated with regulatory and tax advice—that the draft decision removed from the base year costs (as per water security mode)
  - Inclusion of an ongoing efficiency target of 0.25% per year on corporate costs consistent with other industry-wide productivity improvements targets used by IPART for frontier companies competing in an open market with strong commercial pressures
- \$2.66m more than allowed for under the draft decision, reflecting:
  - Higher insurance premiums—including BI insurance premiums required to manage the risks associated with the abatement mechanism (See Section 3.1 and Appendix 3-1)
  - Inclusion of a number of corporate costs—such as professional fees associated with regulatory and tax advice—that the draft decision removed from the base year costs
  - Inclusion of an ongoing efficiency target of 0.25% per year on corporate costs (rather than 0.75% per year applied to corporate costs in the draft decision)

#### Insurance costs

Our October 2016 proposal included the costs of insurance consistent with the allocation of risk in the 2012 Determination. The proposed insurance amount was \$1.94m less than the allowed insurance costs in the 2012 Determination.

The draft decision is to accept the proposed insurance amounts and that SDP's coverage for business interruption is adequate and would be sufficient given the proposed changes to the abatement mechanism.

<sup>77</sup> There are a number of potential issues that may distort like-for-like comparisons across countries. For example, there may be material differences in regulatory arrangements between the jurisdictions that could affect costs (e.g. the extent of cost pass-through/the incentive power of the regime, the maturity of the regulatory regimes and the time that has been available to the networks to remove inefficiencies) as well as cost structures (opex/capex allocations), input costs, labour rates, tax, employment legislation and social benefits.





We do not agree with the draft decision's finding that the proposed coverage for business interruption is adequate and would be sufficient given the proposed changes to the abatement mechanism.

Our revised proposal includes an additional \$1.1m (\$16/17, rounded) in the forecast operating expenditure over the 2017-22 regulatory period to reflect the additional costs of obtaining reasonable BI insurance coverage for abatement during drought following an insurable Force Majeure event (refer Appendix 5-2: Aon 2017 Business Interruption Insurance Review). The extent of BI cover proposed by SDP in its revised proposal reflects the proposed abatement regime per IPART's draft determination and a Maximum Foreseeable Loss (MFL) scenario for the plant priced based on current market conditions.

SDP's BI cover reviewed by Deloitte reflected the 2012-2017 abatement regime regulated by IPART and so does not represent the proposed regulatory abatement regime now being faced by SDP following the IPART draft determination and should not be adopted by IPART.

## 6. Forecast capital expenditure

**Table 6.1: Overview of our response to the draft decision on forecast capital expenditure**

Our response to the draft decision on forecast capital expenditure		
Membrane capital expenditure in restart mode	<p>We accept the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period. However, we note this treatment is not consistent with <i>Australian Accounting Standards</i>.</p> <p>We also accepts that the cost of membranes associated with supply for emergency response to SWC will be subject to ex-post review as part of the 2022 Determination.</p> <p>Our revised proposal incorporates efficient membrane expenditure as capital expenditure and further membrane replacement has not been included in subsequent restart charges over the 2017-22 regulatory period.</p>	
Periodic maintenance capital expenditure	<p>We accept the draft decision to reclassify all efficient periodic maintenance costs as capital expenditure. However, we note that for the majority of periodic maintenance expenditure, this treatment is not consistent with Australian Accounting Standards.</p> <p>In addition, we do not agree with the draft decision finding that:</p> <ul style="list-style-type: none"> <li>• A proportion of efficient periodic maintenance costs should be excluded due to coverage by the plant warranty</li> <li>• Efficient periodic maintenance costs are consistent in water security and full operation modes.</li> </ul> <p>Our revised proposal:</p> <ul style="list-style-type: none"> <li>• Maintains that all prudent and efficient expenditure should be recovered from customers, consistent with our October 2016 proposal</li> <li>• Accepts that efficient periodic maintenance costs will be consistent in water security and full operation modes for the purposes of the 2017-22 regulatory period only, given that the 2017 MWP mean that it is unlikely that SDP will be called into operation (and incur higher periodic maintenance costs in full operation) over the 2017-22 regulatory period. Should SDP enter full operation mode over the 2017-22 regulatory period, SDP would seek to include these additional costs in the RAB as part of the 2022 Determination.</li> </ul>	
Drinking water pumping station capital expenditure	<p>We accept the draft decision to defer the capital expenditure associated with installing the additional pump over the 2017-22 regulatory period and our revised proposal excludes this capital expenditure.</p>	
Membrane test kit capital expenditure	<p>We accept the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period.</p> <p>To ensure an efficient decision on the amount of membrane replacement, our revised proposal includes:</p> <ul style="list-style-type: none"> <li>• Forecast capital expenditure of \$1m in 2017-18 for a membrane test kit</li> <li>• Forecast operating expenditure associated with operating and powering the test kit and analysing the test results.</li> </ul>	

Forecast capital expenditure is an input to the return on and of capital components of our revenue requirement (see Section 5).

We must propose the total prudent and efficient capital expenditure we will require to provide our water security and water supply services in each year over the 2017-22 regulatory period.

We have proposed the total capital expenditure necessary to comply with all relevant regulatory obligations and requirements and to ensure the safety, reliability and responsiveness of our water supply and water security services as envisaged under the MWP over the 2017-22 regulatory period. Given the uncertainty on when the plant might next be required to operate, it is important that the regulatory framework allows

SDP to recover the prudent and efficient costs of investment in assets made during the 2017-22 regulatory period whether the plant operates or not.

This section provides an overview of our forecast capital expenditure over the 2017-22 regulatory period and compares this to our October 2016 proposal and the draft decision.

Unless stated otherwise, our approach to establishing the forecast capital expenditure is consistent with SDP's position as set out in the October 2016 proposal. Further information on our long-term investment plan for the plant and pipeline is set out in our October 2016 proposal.

## 6.1 Overview of forecast capital expenditure for 2017-22 regulatory period

The forecast capital expenditure over the 2017-22 regulatory period is \$18.47m. The major components of the forecast capital expenditure over the 2017-22 regulatory period include:

- Periodic maintenance capital expenditure
- An extra pump in the DWPS to support water security.
- A membrane test kit.
- Corporate capital expenditure.

No capital expenditure is proposed on the pipeline.

**Table 6.2: Forecast capital expenditure for the 2017-22 regulatory period (\$millions, \$2016-17)**

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
October 2016 proposal	0.315	0.015	2.115	0.015	0.015	2.48
IPART draft decision	1.53	2.64	2.87	3.75	3.67	14.46
Revised proposal	2.71	3.92	3.69	4.48	3.67	18.47

Source: SDP, IPART draft decision

Table 6.2 sets out the forecast capital expenditure for the 2017-22 regulatory period and compares these to our October 2016 proposal and the draft decision. It shows that our forecast capital expenditure is:

- \$15.99m more than our October 2016 proposal, mainly reflecting capitalisation of periodic maintenance (rather than treating this as operating expenditure) consistent with the draft decision
- \$4.01m more than allowed for under the draft decision reflecting:
  - The inclusion of full efficient periodic maintenance costs, including \$3m of expenditure for permeate hoses which the draft decision excluded on the basis of Atkins Cardno's assertion that these should be covered by warranty. In our view, these are clearly general wear and tear and are not covered by warranty).
  - The inclusion of \$1m for a portable membrane test kit SDP considers necessary to inform prudent future decisions on membrane replacement.

Table 6.2 does not include membrane replacement capital expenditure as these costs will only be incurred if SDP transitions to restart following the prolonged period of water security shutdown.

## 6.2 Approach to forecasting capital expenditure

The following discussion outlines the basis for our revised forecasts and how they compare to our October 2016 and the draft decision.

### 6.2.1 SDP October 2016 proposal

Our October 2016 proposal included capital expenditure of \$2.1m to provide for the acquisition and installation of an additional pump in the DWPS. The underlying objective of investment is to enhance the availability of the DWPS to provide reserve pump capacity to ensure the plant can achieve its full production supply at 91.3GL/year and allow for flexibility to provide low flow operations if required in future. Our October 2016 proposal detailed the risks associated with reduction in pumping station capacity and the options available to address these risks. It highlighted that the investment in an additional pump was the preferred option given that it establishes water security for customers by increasing drinking water pump station availability to meet plant availability and the low flow pump allows for flexibility to provide low flow operations if required in future. Our October 2016 proposal included the business case supporting the decision to investment in the additional pump.

Our October 2016 proposal also included corporate capital expenditure of \$0.3m for a new office fitout and \$0.015m per year for IT related expenditure to ensure the continued administrative efficiency of SDP as a relatively new stand-alone entity.

SDP proposed no capital expenditure on the pipeline over the 2017-22 regulatory period.

### 6.2.2 IPART draft decision

The draft decision on capital expenditure over the 2017-22 regulatory period is \$11.98m (or 484%) higher than our October 2016 proposal.

This reflects a number of adjustments recommended by Atkins Cardno including:

- Capitalising expenditure on periodic maintenance (see Section 5.2.1), excluding \$3m of capital expenditure associated with defective hoses that Atkins Cardno assert should be replaced by warranty.<sup>78</sup>
- Deferring the cost of the membrane test kit and installing the additional drinking water pump and reviewing them ex-post rather than building it into capital expenditure forecasts. Atkins Cardno considered this expenditure to be uncertain and the draft decision states that any expenditure would be re-assessed for prudence and efficiency as part of the 2022 Determination (and if prudent and efficient, expenditure included with holding costs at WACC).

The draft decision also proposes to:

- Set SDP's prudent and efficient capital expenditure at \$30m for a full membrane replacement on the first restart over the 2017-22 regulatory period (see Section 5.2.3). As discussed further in section 8.5, SDP would not incur these costs in subsequent restart charges over the 2017-22 regulatory period.
- Not provide any further allowances for the ongoing replacement of membranes in the 2017 determination period
- Approve SDP's proposed corporate capital expenditure

The draft decision to capitalise the costs of a full membrane replacement on restart and periodic maintenance costs reflects Atkin Cardno's view that these costs should be recognised as an asset consistent with Australian accounting standards as they generate benefits over more than one year.

<sup>78</sup> Atkins Cardno considered that the degradation of the permeate hoses and associated equipment falls under this warranty as the desalination plant was designed to achieve the asset design lives provided in the Durability Plan (i.e. 25 years for mechanical assets) and should therefore not be charged to customers.

The draft decision accepts SDP's proposal for no capital expenditure on the pipeline over the 2017-22 regulatory period.

The draft decision also concluded that past capital expenditure over the 2012-17 regulatory period to be prudent and efficient.

### 6.2.3 SDP revised proposal

Our revised proposal is to accept most of the adjustments to capital expenditure as set out in the draft decision, resulting in a revised proposal for capital expenditure of \$18.47m over the 2017-22 regulatory period.

The following discussion outlines the basis for our revised proposal.

#### 6.2.3.1 Membrane capital expenditure in restart mode

We accept the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period. However, based upon independent expert advice, we note this treatment is not consistent with *Australian Accounting Standards*.

Our revised proposal incorporates efficient membrane expenditure as capital expenditure and further membrane replacement has not been included in subsequent restart charges over the 2017-22 regulatory period.

#### 6.2.3.2 Periodic maintenance capital expenditure

We accept the draft decision to reclassify all efficient periodic maintenance costs as capital expenditure for the purposes of the 2017-22 regulatory period. However, we note that this treatment is not consistent with the *Australian Accounting Standards* for the majority of forecast periodic maintenance expenditure.

However, we do not agree that a proportion of efficient periodic maintenance costs should be excluded due to coverage by the plant warranty.

The warranty in the O&M contract covers defects, deficiencies and faults. Our view is that the permeate hoses (or more correctly the refurbishment of the RO Trains) are neither a defect, fault or a deficiency. Although the RO Trains have a life of 25 years, they require regular maintenance and replacement of individual items within the train that experience wear and tear, much like the seals on a pump. Furthermore, asset lives for a category of assets (in this instance mechanical assets) are based on average lives of all subsets of assets within the category. Some asset subsets will have shorter lives, and some will have longer lives. We have confirmed through the permeate pipework supplier that the hoses have an expected operating life of around 10 years and therefore will meet the design life during the 2017-22 regulatory period. Flexible hoses of this nature are unlikely to have a 25 year operating life. Therefore, it is reasonable to expect some refurbishment of the RO Trains for them to meet their design life. To promote efficient cost recovery and provide efficient price signals regarding the cost of providing our services and these costs should be included in the forecast capital expenditure.

In addition we accept that efficient periodic maintenance costs will be the same in water security and full operation modes for the purposes of the 2017-22 regulatory period only, given the changes to the 2017 MWP. The 2017 MWP mean that it is unlikely that SDP will be called into operation (and incur higher periodic maintenance costs in full operation) over the 2017-22 regulatory period. However, should we enter full operation mode over the 2017-22 regulatory period, SDP would seek to include these additional costs in the RAB as part of the 2022 Determination.



### 6.2.3.3 *Drinking water pumping station capital expenditure*

We accept the draft decision to defer the capital expenditure associated with installing the additional pump over the 2017-22 regulatory period and our revised proposal excludes this capital expenditure.

### 6.2.3.4 *Membrane test kit capital expenditure*

To ensure an efficient decision on the amount of membrane replacement, our revised proposal includes:

- Forecast capital expenditure of \$1m in 2017-18 for a membrane test kit
- Forecast operating expenditure associated with operating and powering the test kit and analysing the test results (see Section 5.2).

While Atkins Cardno recommended expenditure on a portable membrane test kit to carry out high pressure testing of the membrane condition in situ, it considered it is prudent to incur this cost in water security shutdown following a potential restart for drought response in the 2017-22 regulatory period. It is implied that a skid test unit is not required in the current shutdown period because a full replacement of membranes is recommended (and allowed for as a contingent capital cost) on the plant's first restart in response to drought.






SDP notes, however, that IPART has also stated (Draft Decision p.68) that it will review actual membrane replacement costs if the plant is triggered to restart in the 2017-22 regulatory period, at the next price review (i.e. it will conduct an ex post prudence and efficiency review of the expenditure on membrane replacement). In these circumstances, SDP considers it important to be in a position to make a prudent decision on the quantum of membranes to replace when it is next called to restart (rather than simply replace all the membranes at that time), and that it will need to do so in a timely fashion, particularly given the strengthened financial penalties associated with the modified abatement mechanism proposed in the draft decision. SDP has therefore included capital expenditure on the membrane test kit in its revised proposal.

### 6.2.3.5 *Corporate capital expenditure*

SDP's revised proposal consistent with its October 2016 proposal and the draft decision is to include capital expenditure of \$0.3m for a new office fitout and \$0.015m per year for IT related expenditure.

## 7. Proposed allowance for a return on assets, regulatory depreciation, tax obligations and other revenue

**Table 7.1: Overview of our response to the draft decision on the proposed allowance for a return on assets, regulatory depreciation, tax obligations and other revenue**

Our response to the draft decision on the proposed allowance for a return on assets, regulatory depreciation, tax obligations and other revenue		
Rate of return	<p>We accept the draft decision's approach to setting the rate of return over the 2017-22 regulatory period and we have reflected the draft decision in our revised proposal.</p> <p>We will participate in IPART's WACC review that applies to future regulatory periods.</p>	
Opening Regulatory Asset Base (RAB)	<p>We agree with the draft decision's recognition that:</p> <ul style="list-style-type: none"> <li>The roll-forward of the RAB from 1 July 2011 to the start of the 2017-22 regulatory period traverses the sale of the plant, and</li> <li>The 2012 Determination was used by potential purchasers of SDP to guide their bids.</li> </ul> <p>For this reason, we do not agree with the draft decision to update the 2011-12 RAB for actual CPI outcomes. Our revised proposal does not make any adjustment to 2011-12 RAB values for actual capital expenditure or actual inflation.</p> <p>In addition, we do not agree with IPART's calculation of nominal depreciation allowances for the 2012-17 regulatory period. Our revised proposal escalates 2012 Determination depreciation allowances using actual inflation data over the 2012-17 regulatory period.</p>	
Tax costs	<p>We accept the draft decision's approach to setting the regulatory tax allowance for water security and full operation modes over the 2017-22 regulatory period and we have used this approach for the purposes of our revised proposal.</p> <p>However we do not agree with the exclusion of a tax cost allowance component in the membrane service charge and our revised proposal uses a pre-tax WACC to account for tax costs in the membrane service charge.</p>	
Membrane asset base	<p>We accept the draft decision to establish a membrane asset base and we have reflected the draft decision in our revised proposal.</p> <p>Although it creates complexity, this draft decision:</p> <ul style="list-style-type: none"> <li>Facilitates the reclassification of all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period.</li> <li>Ensures that customers only pay for membrane replacement costs when they are required.</li> </ul> <p>Section 8.6 includes discussion on the sharing rules for membrane replacement costs.</p>	
Plant asset lives, asset categories and regulatory depreciation	<p>We accept the draft decision's corrections to:</p> <ul style="list-style-type: none"> <li>The remaining lives for plant asset categories,</li> <li>The asset values that were incorrectly transposed for the 2012-17 regulatory period.</li> </ul> <p>Our revised proposal reflects these corrections and we note that this will affect the profile of SDP's regulatory depreciation in future years.</p>	

## Our response to the draft decision on the proposed allowance for a return on assets, regulatory depreciation, tax obligations and other revenue

Pipeline asset lives and depreciation method

We do not agree with the draft decision to set pipeline asset lives of 120 years based on differing assumed operating environments for different parts of the pipeline. This finding:

- Does not reflect the pipeline design life
- Is not supported by evidence and relies instead on assumption
- Is inconsistent with good regulatory practice.



Our revised proposal maintains the pipeline asset life of 100 years based on its design life, consistent with our October 2016 proposal.

Other revenue adjustments

We accept the draft decision's methodology for EnAM revenue adjustments given they appropriately account for:

- The losses made on the sale of surplus energy while in water security mode over the 2012-17 regulatory period
- The holding costs (reflecting the risk of the cash flows under the EnAM) resulting from these losses being recovered through an annuity over the 2017-22 regulatory period



We accept the draft decision's revenue adjustments for the EfAM. However, we note there is a small variation between the calculation of the 2016/17 carry forward EnAM balance between the draft decision and our revised proposal.

The return on capital and the return of capital (depreciation) as well as tax costs and other revenue adjustments are key components of our revenue requirement.

To calculate these components of our revenue requirement we must determine a number of key 'building block' inputs including the:

- Proposed rate of return
- Opening value of the Regulatory Asset Base (RAB)
- Tax costs including the opening Tax Asset Base (TAB) and roll-forward
- Asset lives and depreciation method for the RAB and TAB
- Other revenue adjustments including adjustments to reflect a pass through of specified gains and losses under the EnAM and EfAM.

This section provides an overview of each of these inputs and compares these to our October 2016 proposal and the draft decision. The notional revenue requirements derived from these inputs represent the amount of revenue we need to generate over the 2017-22 regulatory period to allow us to provide the water supply and water security services under the 2017 MWP as well as our obligations to SWC under the WSA.

In our view, IPART's 2017 Determination will promote our customers' long-term interests if it ensures that there is a reasonable opportunity to recover these revenue requirements and that the regulatory settings appropriately balance stability and predictability to minimise regulatory risk and promote investment in long-lived assets (and continued access to financing).

Unless stated otherwise, our approach to determining these inputs is consistent with SDP's position as set out in the October 2016 proposal.

### 7.1 Proposed rate of return

The rate of return is a key input used to calculate the return on capital allowance, and it represents the costs of funding investments in the SDP through borrowings from debt markets and investments from equity

holders. SDP needs to be able to earn an adequate rate of return on capital to continue to invest, operate and maintain a water supply and water security service as envisaged under the MWP.

### 7.1.1 SDP October 2016 proposal

In our October 2016 proposal, we proposed a rate of 4.52% (on a real post-tax basis), as shown in Table 7.2. That rate of return proposal was derived using IPART's current rate of return methodology using market data to the end of July 2016, and was significantly lower than our allowed rate of return for the 2012-17 regulatory period (driven in large part by a material reduction in the risk-free rate and debt premium since 2011).

**Table 7.2: Proposed rate of return ('post-tax real WACC') (%)**

	October 2016 proposal	IPART draft decision	Revised proposal
Return on equity	8.36	8.8	8.8
Return on debt	6.23	6.4	6.4
Inflation	2.45	2.4	2.4
Leverage	60.00	60.00	60.00
Gamma	25.00	25.00	25.00
Corporate tax rate	30.00	30.00	30.00
<b>Post-tax real WACC</b>	<b>4.52</b>	<b>4.9</b>	<b>4.9</b>

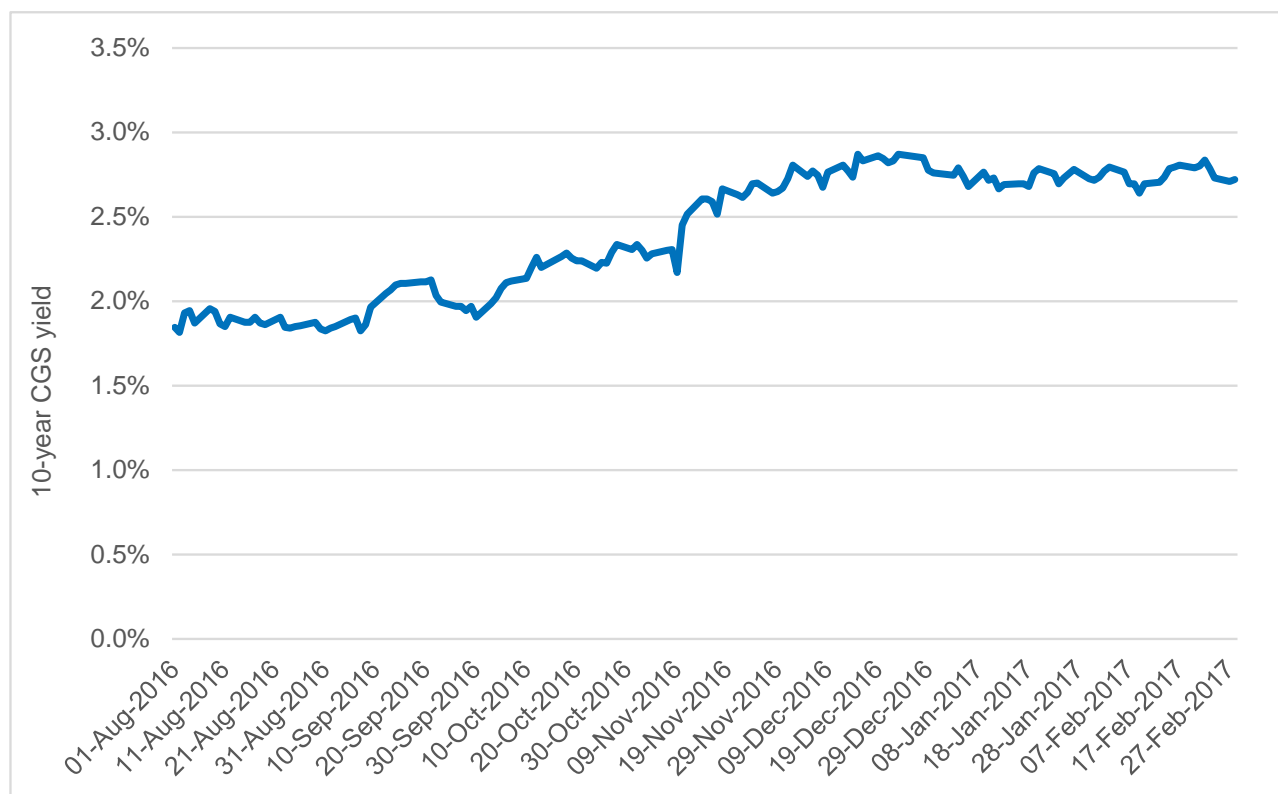
Source: Frontier Economics calculations

### 7.1.2 IPART draft decision

The draft decision provided for a rate of return of 4.9% (on a real post-tax basis), as shown in Table 7.2. This allowed rate of return was derived by IPART using its current WACC methodology and data updated since our October 2016 proposal. The rate of return allowed in the draft decision was higher than the rate of return in our October 2016 proposal largely due to an increase in the yield on Commonwealth Government Securities since July 2016 (see Figure 7.1), which has pushed up estimates of the risk-free rate, market risk-premium and the return on debt. This was recognised by IPART in the draft decision, when it stated:

*SDP proposed a WACC of around 4.5% based on our biannual WACC update from August 2016. Since then, several key WACC parameters have increased to reflect current market conditions.<sup>79</sup>*

<sup>79</sup> IPART Draft Decision Report, p.95.

**Figure 7.1: Changes in yield on 10-year Commonwealth Government securities since July 2016**

Source: RBA data; SDP analysis

### 7.1.3 SDP revised proposal

For the purposes of this revised proposal, we have adopted the rate of return of 4.9% (on a real post-tax basis) allowed by IPART in its draft decision, as shown in Table 7.2. We expect that IPART will update the allowed rate of return using its current methodology, and the latest data available, in its final decision. SDP maintains its view on the correct WACC methodology as set out in the Frontier Economics report included in Appendix 8-1 of its October 2016 submission.

Whilst we have adopted IPART's current rate of return methodology for the purposes of the 2017-22 regulatory period, we note that IPART has announced that it will review its rate of return methodology over the course of 2017. SDP welcomes the opportunity to consider the rate of return methodology for future regulatory periods separately from the review of its prices over the 2017-22 regulatory period process, and intends to contribute via IPART's consultation process.

## 7.2 Opening value of the RAB

The opening value of the RAB is a key input to determining the return on capital and return of capital allowance, and it represents the (as yet) unrecovered past capital investments we have made to provide services to our customers.

### 7.2.1 SDP October 2016 proposal

In our October 2016 proposal, we proposed an opening value of the RAB for the 2017-22 regulatory period of \$1,270.51m and \$703.08m for the plant and pipeline respectively (Table 7.3). We calculated these values consistent with IPART's RAB roll-forward methodology. This involved:

- Taking the opening RAB for the 2012-17 regulatory period as previously determined by IPART (consistent with the TOR)

- Indexing it for actual and expected inflation over the period
- Adding the value of our actual and expected efficient capital expenditure over that period, and
- Deducting the value of regulatory depreciation over that period.

**Table 7.3: Proposed opening value of the asset base (\$2016-17, \$million)**

Asset	October 2016 proposal	IPART draft decision	Revised proposal
Plant	1,270.51	1,262.8	1,270.58*
Pipeline	703.08	701.1	703.08
<b>Total</b>	<b>1,973.59</b>	<b>1,963.9</b>	<b>1,973.66</b>

Source: SDP, IPART draft decision

Note: \* Our October 2016 proposal used actual regulatory depreciation in calculating the RAM roll forward. Our revised proposal uses allowed depreciation, consistent with IPART's methodology. This resulted in a minor adjustment to the opening plant RAB value.

## 7.2.2 IPART draft decision

The draft decision establishes the opening value of the RAB as \$1,262.8m for the plant and \$701.1m for the pipeline.

The draft decision notes that IPART identified two errors in the 2012 Determination that affected SDP's regulatory depreciation profile over the 2012-17 regulatory period:

- Firstly, the asset values for two plant asset categories were swapped inadvertently. This resulted in SDP's depreciation profile being overstated by around \$3m (\$2011-12) in each year over the 2012-17 period.
- Secondly, in the 2012 Determination, new asset lives were applied to existing assets for all depreciating plant asset categories. Overall, this understated depreciation by about \$4 million in each year over the 2012-17 regulatory period.

The draft decision corrects these two errors to ensure that the cash flows to SDP align more closely with the depreciation of its assets in future periods. In doing so, the draft decision notes that:

- In correcting these errors, no retrospective adjustments were made. Instead, the corrections are prospective in nature and will only affect the RAB roll forward from 1 July 2017 onwards.
- The corrections are to be made in a manner that ensures that SDP is financially indifferent on a present value basis over the life of the asset because it would still (over the assumed life of the assets) fully recover its initial investment.

We agree with these principles.

However, as Table 7.3 shows, the total 2017/18 opening RAB value adopted by IPART in the draft decision was approximately \$9.7m lower than the opening RAB value adopted in our October 2016 proposal. This variation results from:

- The adoption of different opening RAB values at the start of the 2012-17 regulatory period (approximate \$4.4m impact)
- Differences in the calculation of nominal depreciation used in the 2012-17 RAB roll-forward (approximate \$5.3m impact)



Rather than take the opening RAB for the 2012-17 regulatory period as previously determined by IPART, the draft decision updates the 2011-12 RAB using actual CPI outcomes. Consistent with the opening RAB for the 2012-17 regulatory period, our October 2016 proposal embodied expected CPI outcomes because at the time the plant was sold, actual CPI outcomes over 2011-12 were not known. Therefore, the RAB value that SDP's owners relied upon when they bid for the asset was calculated using expected CPI outcomes (as reflected in the 2012 Determination) rather than actual CPI outcomes.

We note the draft decision does not update the 2011-12 RAB value using actual capital expenditure. As IPART noted in the draft decision:

*We have decided to update the 2011-12 RAB for CPI outcomes only and not actual capital expenditure. In making our decision, we were mindful that the 2012 Determination was used by potential purchasers of SDP to guide their bids. We also note that the difference between forecast and actual capital expenditure for 2011-12 would have a minor impact on prices over the 2017 determination period.<sup>80</sup>*

We agree with this approach adopted in the draft decision because it recognises that:

- The roll-forward of the RAB from 1 July 2011 to the start of the 2017-22 regulatory period traverses the sale of the plant.
- Potential purchasers of SDP used the 2012 Determination (including the opening RAB that embodies forecast capital expenditure and expected CPI) to guide their bids.
- The Terms of Reference for the 2012 determination require IPART to determine an opening asset value.

We consider that the same reasoning supports continuing to use expected CPI outcomes, as this underpinned the RAB value in the 2012 Determination, which SDP's investors relied upon at the time they bid for the asset.

Further, the draft decision uses allowed depreciation in the RAB roll-forward calculations. This involves escalating depreciation allowances from the 2012 Determination (expressed in \$2011/12) to nominal dollars using actual inflation over the period. In this regard, our calculation of nominal depreciation over the 2012-17 RAB roll-forward period differs to that proposed in the draft decision. As shown in Table 7.4, our proposed depreciation allowances are approximately \$5.3m lower than IPART's draft decision (over the 2012-17 regulatory period), translating to a \$5.3m higher closing RAB in 2016/17.

**Table 7.4: Allowed Depreciation in the 2012-17 RAB Roll-forward (\$million)**

	2012-13	2013-14	2014-15	2015-16	2016-17
Depreciation Allowance (\$2011/12)	43.00	43.03	43.05	43.05	43.05
CPI Escalator	1.0240	1.0547	1.0705	1.0812	1.1050
<b>October 2016 proposal: Depreciation Allowance (\$nominal)</b>	44.03	45.38	46.09	46.55	47.57
<b>IPART Draft Decision: Depreciation Allowance (\$nominal)</b>	45.05	46.43	47.15	47.62	48.67

<sup>80</sup> IPART Draft Decision Report, p.89

### 7.2.3 SDP revised proposal

As shown in Table 7.3, our revised proposal for the opening value of the RAB is based on:

- An opening 2012/13 RAB value of \$2,000.18m, reflecting the closing RAB value from IPART's 2012 Determination.
- Actual capital expenditure over the 2012-17 regulatory period
- Allowed depreciation from IPART's 2012 Determination escalated to nominal dollars using actual inflation
- Indexation of the RAB using actual inflation.

**Table 7.5: Proposed 2012-17 Plant and Pipeline RAB Roll Forward (nominal \$million)**

	2012-13	2013-14	2014-15	2015-16	2016-17
Opening Balance	2,000.18	2,004.56	2,019.34	2,003.84	1,977.71
Net Capex	0.41	0.03	0.29	0.38	0.02
Depreciation	44.03	45.38	46.09	46.55	47.57
Indexation	48.01	60.14	30.29	20.04	43.51
Closing Balance	2,004.56	2,019.34	2,003.84	1,977.71	1,973.66

A break up of 2012-17 RAB roll forward calculations for Plant and Pipeline assets is included at Appendix 5.

## 7.3 Tax costs

For the 2017 Determination, IPART has sought to move to a real post-tax WACC,<sup>81</sup> and to provide a regulatory allowance for corporate tax liabilities through a separate allowance in the building block calculations. This requires the determination of a separate building block for allowed tax costs.

### 7.3.1 SDP October 2016 proposal

In our October 2016 proposal, our proposed tax costs (refer Table 4.2 and Table 4.3) were calculated using IPART's approach in the SWC 2016 Determination.<sup>82</sup>

In particular, we proposed that while separate tax cost allowances should be calculated for SDP's plant and pipeline, any accumulated tax losses in relation to one of these assets should be used to offset the tax cost allowance of the other. That is, we submitted that the pipeline and plant assets should be considered jointly with net tax payable on the income from the combined asset base. If the two assets are considered separately, any tax losses on the pipeline assets would be carried forward rather than realising an immediate tax benefit from the offset against income from the plant assets. Since the pipeline and plant are two components of the business (i.e. neither component is of any real value without the other), we proposed modelling the combined asset base and the resulting net tax payable to the appropriate approach.

<sup>81</sup> IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p62.

<sup>82</sup> In its recent Determination for Sydney Water, IPART calculated the tax allowance for each year by applying a 30% statutory corporate tax rate adjusted for franking credits to the business's (nominal) taxable income. For this purpose, taxable income was calculated as the notional revenue requirement (excluding tax allowance) less operating cost allowances, tax depreciation, and interest expenses.

### 7.3.2 IPART draft decision

The draft decision adopted a regulatory tax allowance as set out in Table 7.6. The tax allowance for each year was calculated by applying a 30% statutory corporate tax rate adjusted for franking credits to the business's (nominal) taxable income (and thus maintaining the current statutory corporate tax rate of 30% to calculate SDP's taxation allowance for the purposes of setting prices over the 2017-22 period).

The draft decision notes that as part of the Commonwealth Government's 2016-17 Budget, a schedule for progressively decreasing the corporate tax rate from 30% to 25% by 2026-27 was announced. If legislated, this could see SDP face a tax rate of 27.5% (i.e. lower than the current statutory rate of 30%) in the final two years of the 2017-22 regulatory period. However, IPART has decided to apply a statutory tax rate assumption of 30% for the full duration of the 2017-22 regulatory period (per SDP's proposal) rather than applying a stepped profile of tax rates through the period. In doing so, IPART noted that:

- Applying different tax rates in different years of the regulatory period would add further complexity to the determination; and
- The revenue impact of maintaining a constant tax rate of 30% would have only a minor impact on the resulting regulatory tax allowance.

In addition, the draft decision adopted our proposal to remove the provision for the carryover of tax losses for the pipeline (i.e. IPART did not set a zero tax allowance where a negative tax allowance is calculated), and to use any accumulated tax losses in respect of the pipeline to reduce the tax costs allowance associated with the plant.

The differences in our October 2016 proposal and IPART's draft decision arise primarily because of IPART's higher rate of return allowance, which results in more income (for plant and pipeline).

**Table 7.6: IPART draft decision allowance for tax – all modes (\$millions, \$2016/17)**

IPART decision	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Plant	8.3	9.0	9.5	10.1	10.5	47.5
Pipeline	-2.3	-2.0	-1.8	-1.5	-1.3	-8.9

Source: IPART Draft Decision

The draft decision notes that accounting for alternative tax rates across each year would necessitate modelling separate price schedules for water security (shutdown) and plant operation modes, adding further complexity to the determination.

### 7.3.3 SDP revised proposal

We accept the approach to setting the regulatory tax allowance over the 2017-22 regulatory period adopted by IPART in the draft decision, and we have used that approach for the purposes of our revised proposal. Our revised proposal for tax cost allowances are set out in Table 4.2 and Table 4.3.

While we have accepted the draft decision's approach to determining tax costs, we note that:

- The revenues associated with the recovery of membrane costs (once membranes have been replaced) will attract a corporate tax obligation; and, therefore
- Tax costs allowances should also be included as a component of the membrane service charge (see Section 8.2). We have incorporated a tax allowance by applying a pre-tax WACC to the membrane asset base. We note the tax costs allowance for water security and full operation mode (in Table 4.2 and Table 4.3).

## 7.4 Membrane asset base

The 2012 Determination classifies costs associated with membrane replacement as operating expenditure, and as such, does not establish a separate membrane asset base.

### 7.4.1 SDP October 2016 proposal

In our October 2016 proposal we continued to classify costs associated with membrane replacement as operating expenditure and, in doing so, did not establish a separate membrane asset base.

### 7.4.2 IPART draft decision

The draft decision capitalises the costs of a full membrane replacement on first restart in accordance with Atkins Cardno's recommendations. To capitalise membrane costs, the draft decision establishes a separate membrane asset base (membrane RAB) as set out in Table 7.7. In particular, the draft decision establishes a membrane RAB:

- With an opening value of \$30m in the year of first restart
- Adopting an asset life for membranes of 8 years
- Not adding any further capital expenditure for the ongoing replacement of membranes, and
- Rolling forward the membrane RAB until the membranes fully depreciate.

**Table 7.7: Membrane RAB, revenue requirement assuming a restart in 2017-18 (\$millions, \$2016-17)**

	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RAB	30.00	26.25	22.50	18.75	15.00	11.25	7.50	3.75
Depreciation	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
Closing RAB	26.25	22.50	18.75	15.00	11.25	7.50	3.75	0.00
Return on capital	1.47	1.29	1.10	0.92	0.74	0.55	0.37	0.18
Depreciation	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
Total capital costs or required revenue	5.22	5.04	4.85	4.67	4.49	4.30	4.12	3.93

Source: IPART Draft Decision

### 7.4.3 SDP revised proposal

Our revised proposal accepts the draft decision to establish a membrane asset base and we have reflected the draft decision in our revised proposal. Although it creates complexity, we note that this draft decision:

- Facilitates the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period;
- Ensures that customers only pay for membrane replacement costs when they are required.

We do not agree with the draft decision to exclude tax costs associated with capitalising membrane replacement. We propose to account for taxation costs by applying a pre-tax WACC of 5.9% in the return on membrane asset calculation. Whilst this differs to the post-tax WACC approach used for Plant and Pipeline assets, it avoids further complexities associated with deriving a series of notional tax depreciation allowances and tax building block components for membrane assets which will vary depending on the year of restart. Overall, there should be no material variation in the derivation of membrane service charge using both approaches.

The inclusion of a tax component increase membrane based revenue requirements as shown in Table 7.8.

**Table 7.8: Membrane Revenue Requirement (\$2016/17, \$million)**

	2017/18	2018/19	2019/20	2020/21	2021/22
Draft Decision	5.22	5.04	4.85	4.67	4.49
SDP Revised Proposal	5.39	5.17	4.96	4.74	4.53
Variation	0.17	0.13	0.11	0.07	0.04

## 7.5 Plant asset lives, asset categories and regulatory depreciation

The appropriate asset lives and depreciation method for SDP's assets are key assumptions in determining the return of capital allowance (or regulatory depreciation).

### 7.5.1 SDP October 2016 proposal

In our October 2016 proposal we proposed plant asset lives for a number of asset categories, including those set out in Table 7.9 below.

**Table 7.9: Remaining asset lives for certain plant asset categories from 1 July 2017 (years)**

Category	SDP proposed	IPART draft decision
Plant	25.0	22.0
Seawater intake	85.0	82.0
Seawater outlet	95.0	92.0
Pumping station	20.0	17.1
Pre-operations payments	15.0	12.1
Project development costs	39.0	36.0

Source: October 2016 proposal, IPART Draft Decision

### 7.5.2 IPART draft decision

As explained in Section 7.2, the draft decision replaced our proposed remaining asset lives with those set out in Table 7.9. In addition, as discussed in Section 7.2, the draft decision corrects for errors associated with asset values for two plant asset categories in the 2012-17 regulatory period had been misclassified inadvertently. Both these corrections will affect the level of SDP's regulatory depreciation for the 2017-22 regulatory period.

### 7.5.3 SDP revised proposal

We agree with the draft decision's correction of the errors identified above, and our revised proposal (refer Table 4.2 and Table 4.3) reflects these changes.

## 7.6 Pipeline asset lives and depreciation method

The appropriate asset lives and depreciation method for SDP's assets are key assumptions in determining the return of capital allowance (or regulatory depreciation).

### 7.6.1 SDP October 2016 proposal

In our October 2016 proposal we sought to adjust the asset lives for pipeline assets from 140 years (assumed by IPART for the 2012-17 period) to 100 years to reflect the design lives for the assets (as articulated in the design documentation for the plant).

### 7.6.2 IPART draft decision

The draft decision did not accept this proposal and sets the asset life for pipeline infrastructure at 120 years. The draft decision was based on the recommendations of Atkins Cardno to set the asset life for new pipeline infrastructure at 120 years reflecting that half the length of the pipeline is land-based and the other half is in a more aggressive environment under Botany Bay.

### 7.6.3 SDP revised proposal

We do not agree with the draft decision to set pipeline asset lives of 120 years based on differing assumed operating environments for different parts of the pipeline. Our view is that the position adopted by IPART in the draft decision:

- Does not reflect the pipeline design life, which is 100 years for *both* the land-based and below-sea parts of the pipeline
- Is not supported by any evidence that an appropriate asset life for the land-based part of the pipeline is 140 years. The land-based asset lives of 140 years recommended by Atkins Cardno is purely assumption-driven. By contrast, SDP has provided IPART with design documentation that does support a 100-year asset life for all parts of the pipeline
- Is unsound and inconsistent with good regulatory practice as it relies on assumption over documented evidence.

Our revised proposal maintains the pipeline asset life of 100 years based on its design life, consistent with our October 2016 proposal.

## 7.7 Other revenue adjustments

The notional revenue requirement includes an adjustment for other revenue items including the pass through of specified gains and losses under the EnAM and EfAM.

### 7.7.1 SDP October 2016 proposal

Our October 2016 proposal included an EnAM revenue adjustment of \$6.78m per year. In water security mode we also included an additional EfAM revenue adjustment of \$0.05m per year. Total proposed other revenue adjustments for EnAM and EfAM over the 2017/22 regulatory period were \$34.12m and \$33.92m in water security and full operation mode respectively (refer Table 4.2 and

Table 4.3). We calculated these other revenue adjustments consistent with IPART's 2012 Methodology Paper, and our October 2016 proposal included an independent expert review of SDP's LGC and electricity trading which highlighted that SDP's trading activities were prudent and achieved value for money.

### 7.7.2 IPART draft decision

As shown in Table 7.10, the draft decision is to:

- Include an allowance into prices over the 2017 determination period for the losses made on the sale of SDP's surplus energy while it was shutdown over the 2012 determination period of \$28.9m or \$5.8m per year (\$2016-17 and including financing costs).
- Include an efficiency carryover of \$0.05m per year for the first three years of the 2017 determination period based on applying the EfAM methodology.

**Table 7.10: IPART allowance for revenue adjustments – all modes (\$millions, \$2016-17)**

IPART decision	2017-18	2018-19	2019-20	2020-21	2021-22	Total
EnAM	5.8	5.8	5.8	5.8	5.8	28.9
EfAM	0.1	0.1	0.1	0	0	0.3

Source: IPART Draft Decision

#### *EnAM adjustment*

IPART's draft decision includes an EnAM revenue allowance of \$28.9m (including an allowance for financing costs) over the 2017-22 regulatory period reflecting MJA's recommendations. This is lower than our proposed allocation of losses under the EnAM in our October 2016 proposal that adopted a significantly higher discount rate in the recovery of EnAM balances.

#### *Allowances for EfAM*

IPART's draft decision is to include our proposed efficiency saving of \$50,000 per annum for the first three years of the 2017 determination period under the EfAM, reflecting a reduction in insurance costs borne by SDP for Veolia.

IPART noted that while this efficiency saving relates to SDP uncovering a double counting of insurance costs, it considers the pass-through meets the objectives of the EfAM by providing SDP with an incentive to identify and remove inefficiencies.

### 7.7.3 SDP revised proposal

Our revised proposal accepts the draft decision's revenue adjustments for the EnAM given they appropriately account for:






- The losses made on the sale of surplus energy while in water security mode over the 2012-17 regulatory period
- An allowance for the financing costs, reflecting the risk of the cash flows under the EnAM, associated with SDP carrying these losses over the 2017-22 regulatory period.

However, our projected 2016-17 carry forward balance of EfAM losses of \$28.8 million differs slightly to the draft decision balance of \$27.4m. As a result, our proposed EfAM revenue adjustment of \$6.06m per year is slightly higher than the draft decision amount of \$5.8m per year. We propose to work with IPART to reconcile this variance.



## 8. Tariff Structure and cost sharing

**Table 8.1: Overview of our response to the draft decision on tariff structure and cost sharing**

Our response to the draft decision on tariff structure and cost sharing		
Pricing structure for making the plant available	<p>We accept the draft decision's approach to:</p> <ul style="list-style-type: none"> <li>Split the existing water service charges into a base service charge and an incremental service charge</li> <li>Set a separate membrane service charge, however we note that the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period is not consistent with Australian Accounting Standards. We also note that the draft decision does not include a tax component allowance in the membrane service charge.</li> </ul> <p>We have reflected the new price structure for making the plant available in our revised proposal.</p>	
Pricing structure for the supply of drinking water (i.e. variable charges)	We agree with the draft decision that retaining a water usage charge (\$/ML) over the 2017-22 regulatory period remains appropriate.	
Separate plant and pipeline charges	We agree with the draft decision that retaining mode-independent pipeline charges over the 2017-22 regulatory period remains appropriate. While the plant and pipeline are complementary assets that are both required to provide our services, there may be transparency benefits in retaining separate charges.	
One-off charges for transitioning between modes	<p>We agree with the draft decision to continue with transition charges that reflect the underlying costs of moving between modes.</p> <p>However, we do not agree with the level of the transition to restart charge (see Section 9).</p>	
Cost sharing	<p>We accept the draft decision's approach to cost sharing for the purposes of our revised proposal given they are unlikely to be material issues over the 2017-22 regulatory period.</p> <p>However, we have some concerns with the draft decision's cost sharing framework and recommend this framework be reconsidered in future periods to ensure it is not a barrier to competition emerging in the market.</p>	

A key element of our proposal is the appropriate tariff structure and sharing of costs between customers over the 2017-22 regulatory period to recover the efficient costs of providing our services and send efficient price signals for investment in, and use of, our services. Setting the appropriate price structures and cost sharing involves determining 'who should pay for what and how'.

The standing TOR require IPART to set prices for our declared monopoly services to ensure we can recover our efficient costs in all shutdown and operation modes, and encourage us to be indifferent as to whether or not SDP supplies drinking water.

Section 8.1 to 8.5 sets out our proposed structure of SDP prices and charges during the 2017-22 regulatory period. Section 8.6 sets out our proposed cost-sharing framework.

In our view, IPART's 2017 Determination will promote our customers' long-term interests if the tariff structures and cost sharing framework provide us with a reasonable opportunity to recover the proposed revenue requirements, send simple, transparent and efficient price signals for investment in, and use of, our services and comply with the standing TOR requirement for financial indifference.

Section 10 then sets out the proposed prices and charges that result from the proposed price structures and cost allocation.

## 8.1 Pricing structure for making the plant available

Under the TOR IPART is required to set maximum prices for making the desalination plant available, which reflect SDP's fixed operating and capital costs and apply whether or not the plant supplies water.

For the 2012 Determination, IPART approved a set of fixed charges for making the plant available to supply drinking water (water service charges) which varied in each of the four shutdown modes and in operation mode, set at a level designed to recover the fixed costs incurred in each of these modes

### 8.1.1 SDP October 2016 proposal

In our October 2016 proposal, we supported IPART's proposed approach set out in its Issues Paper to 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.

We noted that the quantum of fixed charges for each mode under IPART's proposed approach would be the same as it is under existing charges. However, instead of presenting a total fixed charge for each mode, the charge would be presented as a base component and a differential component reflecting the different additional fixed costs associated with each mode relative to water security shutdown mode. We supported IPART's proposed approach on the basis that it would more clearly highlight the costs associated with each mode. We also observed that there may be scope to rationalise some of these modes where the cost differentials are not significant (e.g. short-term shutdown and medium-term shutdown modes).

We also proposed that the fixed charges able to be levied by SDP should automatically change when the plant enters another mode, rather than for the charge to apply for the entire pre-determined duration of a mode and be subject to subsequent adjustments (up or down). As a corollary, decisions about which modes to enter should be subject to an agreed protocol that the plant will always be placed into water security shutdown after a period of operation once the storages return to 80%, unless SWC (or another customer) requests otherwise. In this scenario, SWC (or other customer) would bear the risk of mode selection and therefore the costs of moving between modes if that selection was "incorrect".

### 8.1.2 IPART draft decision

The draft decision retains water service charges for making the desalination plant available in accordance with IPART's TOR, but splits the water service charge into:

- A base service charge (\$/day); and
- An incremental service charge (\$/day).

In particular, IPART states that the base service charge is a fixed daily charge that reflects SDP's efficient fixed costs when in water security mode.<sup>83</sup> It is the sum of the annual fixed operation costs, return on capital, depreciation and return on working capital, divided by the number of days in a financial year. The

<sup>83</sup> These are the minimum costs of maintaining the plant so that it can reliably produce drinking water in a timely manner when required under the 70/80 rule.

draft decision notes that a tax allowance would also be included as a component of the fixed charge to reflect the move towards a post-tax WACC framework.

The incremental service charge, in contrast, reflects the difference in SDP's fixed costs between water security (shutdown) and full operation modes. In full operation mode, SDP would receive the base service charge plus the incremental service charge (comprised of corporate and plant fixed costs).

IPART noted that, while a departure from the 2012 Determination, splitting the water service charge would increase transparency in SDP's fixed costs.

In addition, as discussed in section 2.2, IPART proposes to simplify the price structure by removing the intermittent shutdown periods.

### **8.1.3 SDP revised proposal**

Our revised proposal, consistent with our October 2016 proposal, is that the tariff structure for making the plant available comprise a base service charge (\$/day) and an incremental service charge (\$/day) reflecting the additional fixed costs incurred in plant operation mode (including incremental fixed operating costs, working capital, other revenue adjustments and taxation costs).

However, we propose one refinement to the application of incremental service charges outside of drought. Under the draft decision, if a Plant Operation Period occurs outside a Drought Response Period (e.g. if SDP is supplying water in response to an Emergency Response Notice from Sydney Water) then SDP is not entitled to levy an Incremental Service Charge for that Day if no desalinated water is supplied on that day (see Schedule 1, paragraph 5(c) of Draft Determination). This might occur, for example, if Sydney Water requested SDP to turn off supply on a particular day during such a period.

SDP understands that the rationale for this clause is IPART's assumption that the incremental fixed costs on such a day are avoidable if water is not actually being produced. However, this assumption is not correct – the very nature of these costs is that they are fixed and therefore not avoidable, particularly in circumstances where water is not supplied only for a short period of time. Avoidable costs (such as chemicals and energy) are recovered through the usage charge which by definition is not charged when the plant is not producing. The practical consequence of this provision is that SDP would have to agree with SWC that they would always take at least 1ML/day before SDP agreed to an Emergency Response Notice. This may unnecessarily constrain the flexibility which might be required to best manage the emergency. SDP therefore proposes that this clause be deleted.

## **8.2 Membrane service charge**

A major cost incurred in restarting the plant after a period of extended shutdown is the cost of replacing membranes, a proportion of which will require replacement in order to optimise production and energy consumption when the plant recommences production of desalinated water. Consistent with efficient operating practice, SDP does not replace membranes while the plant is in shutdown mode, but rather defers membrane replacement until the plant is required to restart. SDP does not currently receive any revenue allowance to replace membranes during a period when it is not operating, despite the membranes continuing to degrade over this period.

### **8.2.1 SDP October 2016 proposal**

Our October 2016 proposal was to include replacement of membranes as part of operating expenditure associated with restart. Given the uncertainty as to when the plant may restart, we proposed a set of contingent transition to restart charges, depending on the time at which restart occurs.

## 8.2.2 IPART draft decision

IPART's draft decision is to set separate charges to recover the capitalised costs of a full membrane replacement over the 2017 determination period, which includes a schedule of membrane service charges and one-off charges for residual membrane costs.

IPART proposes to set a schedule of contingent daily charges for membranes given that a restart could in principle occur in any year of the determination period.

The draft decision also sets a separate charge for any residual capital costs of membranes to allow SDP to recoup the full cost of the membrane replacement required at a restart. This would be a one-off charge payable by the user (or users) on transition to shutdown following a period of operation outside drought. The residual costs payable vary depending on which year the restart occurs during the 2017 regulatory period.

## 8.2.3 SDP revised proposal

We accept the draft decision to set a separate membrane service charge and a one-off residual membrane charge for the purposes of the 2012-17 regulatory period. We note that the draft decision does not provide for a tax allowance in the membrane service charge (refer Section 7.3) and we have included this allowance in our revised proposal.

## 8.3 Pricing for the supply of drinking water

The 2012 Determination set a water usage charge (\$/ML) that reflected the variable operating costs based on full production.

However, as noted in section 2.3, the 2012 Determination only permits SDP to charge SWC a variable charge for water supplied by SDP to SWC when the plant is operating in accordance with the 70/80 rule (but any other customers could be levied the regulated usage charge if supplied outside of drought). While it would generally be expected that the plant would be in plant operation mode during drought, the 2012 Determination also provided for SDP to charge for water supplied out of storage during restart or after production has stopped.

In its Issues Paper, IPART recognised that there may be circumstances where SDP supplied water at less than full capacity, even when operating under the 70/80 rule:

- when it is operating at less than full capacity when ramping up production under the 70/80 rule
- when transitioning to a shutdown mode after a period of operation under the 70/80 rule

The Issues Paper notes that in considering the supply of water under these scenarios, IPART would need to consider whether the unit cost per ML of output varies depending on the amount of water produced. It suggested that if this is the case, it might need to set a schedule of charges based on different levels of output.

### 8.3.1 SDP October 2016 proposal

Our October 2016 proposal was that SDP be allowed to recover its variable costs (as determined by IPART) whenever SWC, or any other customer requests water.

Our October 2016 proposal noted that there are significant differences in the cost of producing water at different levels of output such that cost-reflective pricing would suggest there should be different prices. There may however, be practical issues with developing and applying a price schedule over the full potential range of output.

We also noted that the non-application of the EnAM outside of restart or shutdown modes could result in a disincentive for SDP to supply water in these circumstances, as it could be liable for significant difference payments to Infigen.

### 8.3.2 IPART draft decision

The draft decision is to retain a water usage charge (\$/ML) for supplying non-rainfall dependent drinking water, reflecting SDP's efficient variable operating costs (mainly the costs of energy required for the production of desalination water).

IPART noted that although the plant will not produce water during shutdown, the draft decision continues to enable SDP to charge for water supplied out of storage after production has stopped, consistent with the 2012 Determination.

Similarly, the draft decision enables SDP to supply water out of storage during restart, consistent with the 2012 Determination. However, IPART noted that the introduction of an 8-month grace period for the abatement mechanism (discussed in detail in Section 3.1) may reduce the need for this, and may add additional complexity, given it may be unclear if water is being provided from storage or not.

The draft decision sets a nil price if water is supplied to Sydney Water outside of a drought response period unless supplied under an Emergency Response Notice.

### 8.3.3 SDP revised proposal

We accept the draft decision is to retain a water usage charge (\$/ML) for supplying non-rainfall dependent drinking water, reflecting SDP's efficient variable operating costs at full production for the purposes of the 2012-17 regulatory period.

Although the per unit cost of supplying water at less than full production is likely to be higher than IPART's regulated water usage charge, we will accept this for the 2012-17 regulatory period in the absence of verifiable information on the variable operating costs as the plant returns to full production. We note that this provides an additional incentive for us to return to full production as soon as possible.

We consider that the ability to charge for water supplied out of storage under any mode during a drought should be retained to provide maximum flexibility.

## 8.4 Separate plant and pipeline charges

The 2012 Determination established separate plant and pipeline charges.

### 8.4.1 SDP October 2016 proposal

Our October 2016 proposal was consistent with IPART's preliminary view<sup>84</sup> to retain a separate pipeline charge over the 2017-22 regulatory period. While the plant and pipeline are complementary assets that are both required to provide our services, there may be transparency benefits in retaining separate charges.

However, our October 2016 proposal did not include mode-dependent pipeline charges (as canvassed in IPART's Issues Paper) given that pipeline costs do not vary by mode of plant operation (other than flushing at plant restart).

<sup>84</sup> IPART, Review of prices for Sydney Desalination Plant Pty Ltd: From 1 July 2017 - Issues Paper, August 2016, p. 30.

## 8.4.2 IPART draft decision

The draft decision continues to set a separate, mode-independent pipeline charge, consistent with the 2012 Determination.

## 8.4.3 SDP revised proposal

Our revised proposal, consistent with our October 2016 proposal and the draft decision, is to retain a separate pipeline charge that does not vary by mode over the 2017-22 regulatory period.

## 8.5 One-off charges for transitioning between modes

The 2012 Determination established one-off charges to reflect the fixed operating costs SDP incurs when the plant is moving between modes (i.e. charges from moving from each of the various shutdown modes to operation mode and vice versa. Under the 2012 Determination, transition to restart and shutdown charges were payable for each shutdown or restart irrespective of dam levels.

### 8.5.1 SDP October 2016 proposal

Our October 2016 proposal was to include a set of water security restart charges that vary depending on the year in which restart occurs. We submitted that these differential water security restart charges should better reflect the underlying costs of membrane replacement which depend on the time at which restart occurs.

### 8.5.2 IPART draft decision

The draft decision is to set transition charges which reflect the efficient one-off operating costs of moving from water security (shutdown) mode to operation mode and vice versa. There would now only be one such transition to restart and one transition to shutdown charge given the decision to rationalise the previous four shutdown modes into one shutdown mode

The draft decision also specifies that transition charges for restart and shutdown are payable once only during an unbroken drought period. The draft decision that SDP should not receive subsequent transition payments for restarting and shutting the plant down during a drought reflected IPART's view that the plant's primary role is to maximise production during drought and therefore it should not be compensated when it shuts down or restarts for a second or further time during a drought.

SDP will be entitled to levy a transition charge for restart on first restart when the dam storage levels fall below the 70% (now 60%) trigger. Transition to shutdown charges are payable on first shutdown when the dam storage levels exceed the 80% (now 70%) threshold.

Outside of drought, transition to restart or shutdown charges are also paid once only upon notice by a customer to start or cease supply. If a customer requests the plant to restart outside drought, and the plant enters a shutdown for any reason during the term of the contract, no transition to restart (or shutdown) charges are payable in relation to this temporary shutdown.

The draft decision excludes membrane replacement costs from these charges which will instead be capitalised and recovered through a separate daily service charge.

### 8.5.3 SDP revised proposal

We accept the draft decision proposal to set transition charges which reflect the efficient one-off operating costs of moving from water security (shutdown) mode to full operation mode and vice versa. We also accept that only one such transition to restart and transition to shutdown charges during an unbroken drought period when the plant is responding to drought. However, as discussed in section 5.3, in our view



the level of the transition to restart charge is too low as it substantially under-estimates the volume of energy required in restart.

## 8.6 Cost sharing framework

Currently SDP has only one customer – SWC. However, under its licence SDP is able to provide services to other customers.<sup>85</sup> Given the evolving water market in NSW under the WIC Act, and the potential for SDP to secure additional customers in the future, IPART's 2012 determination included a methodology to calculate each customer's prices (both in full operation and shutdown modes) should SDP provide services to other customers. This 'user pays' methodology shares SDP's fixed and variable water charge and shutdown costs in proportion to each customer's share of the total drinking water supplied by SDP (in shutdown mode costs were to be allocated to each customer in proportion to their total desalinated water purchases in the 12 months preceding that shutdown).

In its Issues Paper IPART proposed to change this approach to allocating water security costs between multiple users to what it describes as an 'impactor pays' approach. Under this approach, costs would be allocated to users based on their share of total system demand, rather than their share of SDP supply.

### 8.6.1 SDP October 2016 proposal

Our October 2016 proposal recognised the importance of establishing an appropriate cost allocation framework in the event that additional customers emerge. Although this is not a key priority issue at present as SDP has only one customer (SWC), We accept that it is appropriate that SDP's costs of providing water security and water supply services are shared across all of its direct customers in the event that additional customers emerge. It is prudent that such cost sharing arrangements are known in advance.

However we suggested that further analysis and consultation is required to develop approaches to sharing costs between multiple customers which provide sufficient flexibility to facilitate growth in the bulk water market. SDP indicated that would be happy to participate constructively with IPART, SWC and other potential customers in progressing this issue, which might best occur within the context of a broader review of the evolving water market in NSW.

### 8.6.2 IPART draft decision

The draft decision proposes to change the cost sharing rules in the event that SDP serves multiple customers to reflect the desalination plant's primary role as a drought response measure, such that:

- Base service charges (and pipeline service charges) are always paid for by impactors
- Water usage charges are always paid for by beneficiaries, and
- Incremental service charges and transition charges are paid by impactors when the plant operates as a drought measure and beneficiaries when it operates commercially outside of drought.
- Membranes for drought response are funded in full by impactors while membranes for use outside of drought are funded fully by beneficiaries, but revert to impactors if drought occurs before they are paid in full by beneficiaries.

In this context IPART defines impactors as:

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

<sup>85</sup> Provided such customers are not classified as small retail customers under WIC ACT.



IPART implicitly defines 'beneficiaries' as being equivalent to direct users of desalinated water from SDP.

The cost sharing arrangements in the draft decision mean that both inside and outside of a drought, all bulk water users who draw on the total water supply system (including those who may not be direct customers of SDP) would be required to pay a share of the base service charge and the pipeline charge. The rationale underpinning this approach is that the plant's role as a rainfall-independent source of water during drought implies that its base cost is a form of drought insurance premium or water security payment that should be paid by all those who contribute to water scarcity in Greater Sydney, rather than just the direct users of desalinated water. The same rationale also underpins the draft decision that when the plant is called on to operate during a drought, all bulk water users (impactors) would be required to pay a share of the incremental service charge, and transition to restart and shutdown charges. IPART recognises that not all impactors may have a commercial supply agreement with SDP for levying of these charges but suggests that impactors can be compelled to pay SDP for a contribution to drought security costs via imposition of a WICA licence condition.

However, if the plant operates outside of drought, all charges apart from the base service charge and pipeline charge would be paid by beneficiaries (i.e. the direct users who require desalinated water), rather than shared between all bulk water users who draw on the total water supply system.

Similarly, beneficiaries (i.e. direct users) would always pay for any water supplied to them by SDP (both inside and outside of drought). IPART suggests that while there is an in-principle case for extending the 'impactor pays' principle to SDP's variable charges, this would create perverse incentives for third parties to source water from SDP even though desalinated water is more costly than dam water supplied by Water NSW.

Under the draft decision, the precise cost shares paid by different parties would vary depending on the charge in question and whether it was at a time of drought or not:

- The daily base service and pipeline charges would always be paid for by impactors based on their proportion of 'total system draw' on that day. "Total system draw" includes all water drawn from Water NSW's dams as well as any water supplied by SDP when it is on both inside and outside of drought.
- At times of drought, the daily incremental service charge would also be shared between all users (impactors) based on their proportion of 'total system draw' on that day. However, outside of drought, this charge would be allocated to direct users based on their share of draw from SDP only on that day.
- At times of drought, the one-off transition to restart charge would be shared between all users (impactors) in proportion to their total system draw over the previous 12 months. However, where the plant restarts outside of drought, the charge would be shared equally between all direct users requesting the restart.
- Similarly, at times of drought the one-off transition to shutdown charge would be shared between all users (impactors), but in proportion to their total system draw over the drought period. Where the plant is shutdown after operating outside of drought, the charge would be shared equally between all direct users requesting the shutdown.
- Membrane replacement costs are paid by impactors when the plant is triggered by drought; by beneficiaries when the plant operates outside drought; and costs revert to impactors if drought occurs before they are paid in full by beneficiaries.

While the draft decision represents a significant change to the current cost sharing rules, IPART notes that currently SWC is SDP's only customer and in practice would still pay most fixed costs for the foreseeable future.

### 8.6.3 SDP revised proposal

SDP's revised proposal is to accept IPART's draft decision on these cost sharing rules for the purposes of the 2017-22 regulatory period.

This acceptance however is premised on the low likelihood of SDP securing any new customers during the 2017-22 regulatory period and therefore the low likelihood that the cost sharing rules will have any practical effect. We are concerned that the timeframe and process for developing and considering the new rules has not been adequate to be confident that they:

- Are capable of practical implementation; and
- Provide a robust basis for emergence of an efficient market

On the first point, we note that the proposed approach is heavily dependent on being able to levy charges on impactors who may not necessarily have a direct commercial relationship with SDP. It is not clear that IPART has the powers under WICA to compel impactors to pay. It is also not clear that Water NSW can be compelled to provide information to SDP monthly about who they are supplying in order for SDP to recover charges from other impactors in a timely manner and satisfy its customer, SWC, that it is billing correctly.

In addition, the move to sharing based on customer impact creates a credit risk issue for SDP. Currently, SWC would pay 100% of SDP's prices unless SDP chose to enter into an agreement with another customer, presumably having assessed the credit worthiness of that customer. Under the proposed new arrangement SWC's obligation would be reduced from 100% if there is another impactor taking water from Water NSW, even if that Impactor has not entered any agreement with SDP and is not being supplied by SDP. This means SDP has no control over the creditworthiness of the Impactor and no contract it could enforce against the Impactor.

Assuming these contractual gaps were somehow addressed, there would be additional costs associated with implementing these more complex billing, commercial and administrative arrangements, compared to the current arrangements in place for a single customer (SDP). For example, SDP would need to:

- Procure and implement a billing system to cater for an unknown quantity of customers
- Establish accounts receivable and credit checking processes
- Increased Treasury functions, such as cash receipting and bank reconciliations
- Implement associated reporting requirements
- Recruit appropriately skilled administrative staff to support the expanded functions

SDP has not included these costs in its forecast expenditure for the 2017-22 regulatory period.

SDP's second area of concern is that the cost sharing rules in the draft decision that apply to direct users outside of drought are excessively prescriptive and may undermine the emergence of new customers. For example, IPART specifies that transition to restart and shutdown charges be shared equally between any direct customers and that daily incremental service charges outside of drought be shared based on the proportion of draw from SDP on that day. These rules would mean the restart charges would be allocated to such customers based on the number of customers, with no regard for their relative volumes or willingness to pay. If there were two such customers, one who accounted for 95% of demand from the plant and the other only 5% of demand from the plant, SDP would be required to charge each of them a 50% share of the transition charges. This could lead to a sub-optimal outcome whereby the charge for the lower volume customer exceeded their willingness to pay, so that it elected to not take a supply from the plant. This in turn would leave the first customer bearing all the costs, which might then deter it from taking a supply either. The shutdown period residual membrane service charge which would be paid by beneficiaries would similarly be a significant disincentive to new entrants, and potentially provide windfall benefits to Impactors, should the membranes still be in service when the next drought commenced. The

point here is that by imposing very prescriptive rules in these circumstances, the draft decision may create risks that impede the emergence of a market for new customers.








In our view, the cost sharing rules for charges incurred as a consequence of discretionary supply outside of drought should be much less prescriptive. While it is true that transition charges recover costs that are independent of volumes supplied to individual customers, it does not follow that these joint costs should therefore be shared equally between such customers. The relevant economic principle in allocating joint costs is that the share for each customer should at least cover incremental cost but be no higher than the lower of stand-alone cost and willingness to pay. Other standard regulatory cost sharing principles typically relate to having a defensible, objective and transparent methodology that uses an appropriate set of causal allocators for allocating the costs of shared assets and/or activities across impactors.<sup>86</sup> We propose that IPART should in future apply such higher-level principles to SDP's allocation of costs arising from discretionary supply of water outside of drought rather than the highly prescriptive rules in its draft decision.

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<sup>86</sup> We note that IPART has recently commissioned advice from Frontier Economics as part of its 2017-21 WaterNSW bulk water price review that recommended a recast of the approach to determining cost shares. One of Frontier Economics' recommendations was that one of the key pre-conditions for implementing a sustainable cost sharing framework is the specification of an appropriate set of causal allocators for allocating the costs of shared assets and/or activities across impactors and services. Frontier Economics, Review of WaterNSW cost shares: Report prepared for IPART, December 2016.

## 9. Customer and financial impacts of our proposed prices

**Table 9.1: Overview of our response to the draft decision on the prices and charges**

Our response to the draft decision on SDP's prices and charges		
Base service charge	We do not agree with the draft decision on the base service charge for the plant in water security mode, given that it does not reflect our proposed notional revenue requirements (See Section 4.1).	
Incremental service charge	We do not agree with the draft decision on the incremental service charge for the plant in full operation mode, given that it does not reflect our proposed notional revenue requirements (See Section 4.2).	
Membrane service charge	We do not agree with the draft decision on the membrane service charge given that it does not account for forecast tax costs. We also note that the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period is not consistent with <i>Australian Accounting Standards</i> .	
Usage charge	We do not agree with the draft decision on the usage charge for the plant in full operation mode, given that it does not reflect our proposed notional revenue requirements (See Section 4.2).	
Pipeline charge	We do not agree with the draft decision on the pipeline charge, given that it does not reflect our proposed notional revenue requirements (See Section 4.1).	
Transition to restart charge	We do not agree with the draft decision on the transition to restart charge as it excludes a significant volume of energy associated with the transition to restart. Our revised proposal includes a transition to restart charge that reflects the volume of energy in restart submitted in the October 2016 proposal of 79,652MWh.	
Transition to shutdown charge	We agree with the draft decision on the transition to shutdown charge.	

Our prices include the charges for our water supply and water security services, as well as the one-off charges for transitioning between the relevant modes within these services – for example transitioning from shutdown to restart, and from full operation to one of the shutdown modes.

In developing our proposed prices, we were guided by the requirements in the standing TOR, our proposed form of regulation – including the use of price caps to recover mode based revenue requirements – our proposed tariff structures and our customers' priorities and preferences.

Section 9.1 provides an overview of our proposed prices over the 2017-22 regulatory period.

Section 9.2 outlines the customer and financial impacts of our proposed prices.

### 9.1 Overview of our proposed prices

This section provides an overview of our proposed prices over the 2017-22 regulatory period for water security and full operation modes, and the one-off charges for transitioning between these modes.

#### 9.1.1 Overview of our proposed prices – water security and full operation mode

Table 9.2 sets out the proposed prices for the plant and pipeline in water security mode and full operational mode for the 2017-22 regulatory period, and compares these to draft decision.

**Table 9.2: Proposed prices for the plant and pipeline for the 2017-22 regulatory period (\$2016-17)**

	2017-18	2018-19	2019-20	2020-21	2021-22
<b>Revised proposal</b>					
Plant service charges (\$/day)					
<i>Base service charge</i>	\$373,457	\$370,638	\$365,660	\$364,224	\$359,016
<i>Incremental service charge (operating mode only)</i>	\$21,173	\$21,504	\$21,289	\$20,778	\$21,869
Membrane service charge (\$/day)*	\$14,766	\$14,174	\$13,545	\$12,990	\$12,398
Pipeline service charge (\$/day)	\$108,291	\$108,128	\$107,613	\$107,656	\$107,347
Proposed usage charge (\$/ML)	\$612	\$612	\$612	\$612	\$612
<b>IPART draft decision</b>					
Plant service charges (\$/day)					
<i>Base service charge</i>	\$369,694	\$366,176	\$360,890	\$357,207	\$352,780
<i>Incremental service charge (operating mode only)</i>	\$21,832	\$22,232	\$22,246	\$22,022	\$23,337
Membrane service charge (\$/day)*	\$14,301	\$13,798	\$13,258	\$12,791	\$12,288
Pipeline service charge (\$/day)	\$103,018	\$103,021	\$102,682	\$102,875	\$102,725
Proposed usage charge (\$/ML)	\$684	\$669	\$654	\$652	\$651
<b>Comparison to draft decision</b>					
Plant service charges (\$/day)					
<i>Base service charge</i>	\$3,763	\$4,462	\$4,770	\$7,017	\$6,236
<i>Incremental service charge (operating mode only)</i>	-\$659	-\$728	-\$957	-\$1,244	-\$1,468
Membrane service charge (\$/day)*	\$465	\$376	\$287	\$199	\$110
Pipeline service charge (\$/day)	\$5,273	\$5,107	\$4,931	\$4,781	\$4,622
Proposed usage charge (\$/ML)	-\$72	-\$57	-\$42	-\$40	-\$39

Note:\* The membrane service charge is only payable if restart occurs. For the purposes of this table we have assumed that restart occurs in 2017-18.

### 9.1.2 Overview of our proposed prices for transitioning between modes

Table 9.3 sets out the proposed prices for transitioning from water security to full operation mode for the 2017-22 regulatory period, and compares these to prices for 2016-17 (as approved by IPART in its 2012 Determination).

**Table 9.3: Proposed prices per event for transitioning from water security to full operation mode for the 2017-22 regulatory period per event (\$'000, \$2016-17)**

	2017-18	2018-19	2019-20	2020-21	2021-22
Revised proposal	\$17,382	\$17,382	\$17,382	\$17,382	\$17,382
IPART draft decision	\$9,654	\$9,577	\$9,500	\$9,488	\$9,483

	2017-18	2018-19	2019-20	2020-21	2021-22
Comparison with draft decision	\$7,728	\$7,805	\$7,882	\$7,894	\$7,899

Table 9.4 sets out the proposed prices for transitioning from full operation to water security mode for the 2017-22 regulatory period, and compares them to the draft decision. It shows that our proposed prices for transitioning to water security mode are consistent with those allowed under the draft decision across the 2017-22 regulatory period.

**Table 9.4: Proposed prices per event for transitioning to water security mode for the 2017-22 regulatory period (\$'000, \$2016-17)**

	2017-18	2018-19	2019-20	2020-21	2021-22
Revised proposal	\$1,686	\$1,686	\$1,686	\$1,686	\$1,686
IPART draft decision	\$1,686	\$1,686	\$1,686	\$1,686	\$1,686
Comparison with draft decision	-	-	-	-	-

## 9.2 Overview of customer impacts of our proposed prices

Our proposal includes a 19.6% decrease in the revenue to be recovered from customers in water security for the 2017-22 regulatory period compared to the approved revenue requirement for the 2012-17 regulatory period (excluding the impact of inflation), on a cost per customer basis.

This will deliver average annual savings of around \$21 per customer over the 2017-22 regulatory period or:

- 2.6% on a small residential end-customer water and wastewater bill (excluding the impact of inflation)
- 1.9% on a larger residential end-customer water and wastewater bill (excluding the impact of inflation)
- 1.5% on a small business end-customer water and wastewater bill (excluding the impact of inflation)

Figure 9.1 outlines the indicative impacts for a range of typical customers of our proposed charges in water security and full operation mode. These have been calculated relative to the allowed revenues for the 2012-17 regulatory period, on a cost per customer basis.

**Figure 9.1: Indicative customer impacts of our 2017 regulatory proposal (excluding inflation)**



Source: SDP Analysis

Note: These have been calculated relative to the allowed revenues for the respective modes; SDP operating mode excludes the costs of restarting the SDP.





## Supporting Appendices: SDP Revised regulatory proposal to IPART

Review of prices for Sydney Desalination Plant Pty Ltd

From 1 July 2017

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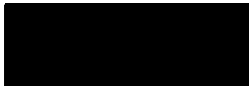
## Appendix 1 About this proposal

### 1.1 CEO's Declaration of accuracy and consistency of data in the proposal

In accordance with the Guidelines for Water Agency Pricing Submissions, December 2015 (the Guide), of the Independent Pricing and Regulatory Tribunal of New South Wales, I declare that:

- a. The information provided in our pricing proposal submitted on 24 November 2016 is the best available information of the financial and operational affairs of the Sydney Desalination Plant Pty Ltd and has been checked in accordance with section 2.17 of the Guide; and
- b. There are no circumstances of which I am aware that would render any particulars included in the information provided to be misleading or inaccurate.

Certified by the Chief Executive Officer



Keith Davies

18 April 2017

## 1.2 Response to IPART’s Draft Decisions

The table below provides a summary of SDP’s responses to the decisions outlined in the Draft Report. It must be read in conjunction with SDP’s revised proposal and should not be considered in isolation.

**Table 1.1: Summary of SDP responses to the IPART draft decision**

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<b>Length of determination</b>		
1 Adopt a 5-year determination period from 1 July	We agree that a five year determination period (from 1 July 2017 to 30 June 2022) provides an appropriate balance between providing certainty to SDP (and its customers) and being responsible to changes in SDP’s operating environment.	Section 2.1
<b>SDP’s operating modes</b>		
2 Simplify SDP’s modes of operation for pricing purposes to the following- water security (shutdown), restart, and plant operation.	<p>We agree that mode based pricing—that establishes the efficient and prudent revenue requirements and prices required to operate in each mode—remains appropriate given that mode based pricing can reflect the varied operating characteristics and costs of operating, maintaining and investing in the SDP across different modes as envisaged under the 2017 Metropolitan Water Plan.</p> <p>We also agree that simplifying the number of modes for pricing purposes to water security (shutdown), restart and plant operation reflects SDP’s default position to transition to water security after a period of operation.</p> <p>We accept the draft decision to adjust charges when the plant is inoperable during drought by strengthening the abatement mechanism. We agree that strengthening the abatement mechanism (rather than introducing a new inoperable mode) is a better-targeted and more proportionate way of ensuring that SDP’s incentives reflect its drought response role. However, we have proposed a number of further refinements to better achieve the underlying objectives of the abatement mechanism (see Section 3.1).</p>	Section 2.2
<b>Regulating SDP’s prices</b>		
3 Continue regulating SDP’s prices outside drought for all customers	<p>We accept the draft decision to regulate prices outside drought for all customers given it is unlikely to be a material issue over the 2017-22 regulatory period. We note that this will enable us to provide a regulated service to SWC and end-use water customers in an eight-month restart, followed by full operation at design capacity.</p> <p>However, the scope of services subject to regulation should be reconsidered in future periods to ensure it does not create a barrier to competition emerging in the market.</p>	Section 2.3

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>4 Retain the nil price outside drought to Sydney Water except in the exceptional circumstances specified in the Water Supply Agreement, which are to:</p> <ul style="list-style-type: none"> <li>- Mitigate the effects of a public health incident; or</li> <li>- Ensure security of supply or network stability during periods of outages, unavailability or maintenance on any water infrastructure in Sydney Water's areas of operation.</li> </ul>	<p>Our revised proposal accepts the draft decision to regulate prices outside drought for all customers given it is unlikely to be a material issue over the 2017-22 regulatory period. We support the draft decision to remove the nil charge for supply of water in exceptional circumstances.</p>	Section 2.3

### Cost pass-through mechanism

<p>5 Not include a general cost pass-through mechanism in the 2017 Determination</p>	<p>We do not agree with the draft decision to exclude a targeted mechanism to manage costs associated with unforeseen and uncontrollable events. We also do not agree with the draft decision's findings that:</p> <ul style="list-style-type: none"> <li>• It is efficient to partially expose SDP to these risks (such as changes to licence conditions) given that in practice SDP has little influence over the setting of its regulatory environment, whereas IPART included and utilised pass through mechanisms for costs associated with changes in licence conditions for state-owned electricity network businesses</li> <li>• SDP's proposed cost pass through framework is too general, given the proposed event definitions and pass through framework are modelled on previous pass through mechanisms included in IPART Determinations</li> <li>• The cost impacts associated with unforeseen and uncontrollable events are symmetric such that SDP can 'win some, lose some' over time</li> <li>• Uncertainty in SDP's operating environment (such as changes to the 2017 MWP and/or amendments to SDP's operating licence) are adequately addressed by references to the licence within the Draft Determination.</li> <li>• The re-opening the determination is an efficient and cost-effective alternative to manage these risks.</li> </ul> <p>As is well-accepted under other regulatory frameworks governing infrastructure providers (including IPART's electricity network and retail determinations), a targeted cost pass through mechanism to manage risks resulting from unforeseen and uncontrollable events can represent an efficient allocation of risk, maintain appropriate financial incentives and ensure efficient price signals are sent to customers regarding the costs of providing services.</p> <p>Our revised proposal maintains the introduction of a targeted cost pass-through mechanism to efficiently manage the risks associated with a number of unforeseen and uncontrollable events.</p>	Section 3.4
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### Abatement mechanism



Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>6 Broaden the abatement mechanism to apply uniformly during drought from 1 July 2018. This means:</p> <ul style="list-style-type: none"> <li>- SDP's fixed charges would be abated for shutdown and restart days during drought resulting from: <ul style="list-style-type: none"> <li>o Events within SDP's control, and</li> <li>o Insurable events outside SDP's control.</li> </ul> </li> <li>- The daily volumes produced on these shutdown or restart days (i.e. OML) would be included in the abatement factor, and</li> <li>- The abatement factor would apply to SDP's fixed daily charges during these shutdown and restart days.</li> </ul>	<p>We agree with the continuation of an abatement mechanism that provides SDP with strong financial incentives to operate at full capacity when called upon, consistent with SDP's drought response role.</p> <p>We also agree with many of the draft decision's amendments that enable SDP to better manage fluctuations in output during drought by removing the 250ML daily cap on the abatement factor and introducing an 8 month grace period to remove perverse incentives for SDP to dispose of water during the ramp-up period. However we are concerned that the draft decision's amendments:</p> <ul style="list-style-type: none"> <li>• Are asymmetric and consequently, focus solely on imposing penalties for under-performance, without rewards for over-performance</li> <li>• Appear unreasonably punitive by carrying-over of the abatement factor to fixed charges when the plant is returning to full production</li> <li>• Create risks associated with distinguishing between force majeure events that are insurable and those that are not, which will require clarification from IPART.</li> </ul> <p>We have proposed a number of further refinements to better achieve the underlying objectives of the mechanism, including implementing a genuine grace period and resetting the abatement factor to unity between drought episodes.</p>	Section 3.1
<p>7 Provide SDP with an 8-month 'grace' period from abatement when the plant first responds to a drought period under the 70/80 rule:</p> <ul style="list-style-type: none"> <li>- The daily volumes of production will not be included in the abatement factor for an 8-month period, commencing on the day when dam levels first fall below 70% since they were last above 80%.</li> <li>- The abatement factor will however, still apply to all daily fixed charges during a plant operation period including for any plant operation period that falls within the 8-month 'grace' period from abatement.</li> </ul>	See response to draft decision 6.	Section 3.1

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>8 Align the abatement mechanism with the design parameters of the plant by:</p> <ul style="list-style-type: none"> <li>- Removing the 250 ML cap on daily volumes for calculation of the abatement factor applied to daily fixed charges</li> <li>- Retaining the averaging period of 365 days for calculation of the abatement factor.</li> <li>- Introducing a true-up of fixed charges to claw back any over-recovery of revenue over a single episode of drought, which <ul style="list-style-type: none"> <li>o Includes holding costs calculated using the relevant WACC, and</li> <li>o Is payable at the end of a drought response period.</li> </ul> </li> <li>- Resetting the abatement factor to unity, if the plant exists drought with an abatement factor above unity.</li> <li>- Retaining and using the abatement factor, if the plant exists drought with an abatement factor less than unity.</li> </ul>	See response to draft decision 6.	Section 3.1
<p>9 Exempt SDP from abatement on any day when it is required to reduce production below 250ML per day in order to comply with a law or a binding direction, order or similar made under a law.</p>	See response to draft decision 6.	Section 3.1
<p>10 Not exempt SDP from abatement when Sydney Water is unable to accept water on a day.</p>	See response to draft decision 6.	Section 3.1
<p>11 Exempt SDP from abatement when the plant is responding to Sydney Water in one of the exceptional circumstances specified in the Water Supply Agreement.</p>	See response to draft decision 6.	Section 3.1
<p>12 Continue to apply the abatement factor to all daily fixed charges, which includes base, incremental and membrane service charges under IPART's draft price structures.</p>	See response to draft decision 6.	Section 3.1
<p>13 Deem the Daily Volume on 364 Availability Days preceding the first Availability Day equal to 250 mL per day from the 2017 determination period where no prior history exists</p>	See response to draft decision 6.	Section 3.1

#### Notional revenue requirement



Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>14 Set SDP's notional revenue requirement in each year of the 2017-22 determination period for:</p> <ul style="list-style-type: none"> <li>- The plant in operation and water security (shutdown) modes, as shown in Table 4.1 of the draft decision, and</li> <li>- The pipeline across all modes of operation, as shown in Table 4.2 of the draft decision.</li> </ul>	<p>We do not agree with the draft decision on the revenue requirements for the plant and pipeline in water security mode, specifically the draft decision on:</p> <ul style="list-style-type: none"> <li>• Opening Regulatory Asset Base (RAB) (see Section 7.2)</li> <li>• Pipeline asset lives (see Section 7.5).</li> </ul> <p>Our proposed revenue requirement for the plant and pipeline for the 2017-22 regulatory period in water security mode is \$866.26m (exclusive of electricity network charges), which is:</p> <ul style="list-style-type: none"> <li>• 19.6% lower than the approved revenue requirements in water security mode for the 2012-17 regulatory period, on a cost per customer basis (excluding the impact of inflation).</li> <li>• 2.2% higher than the draft decision on the revenue requirements in water security mode,</li> </ul> <p>We do not agree with the draft decision on the revenue requirements for the plant and pipeline in full operation mode, specifically the draft decision on:</p> <ul style="list-style-type: none"> <li>• Cost per unit of energy (see Section 5.3)</li> <li>• Opening Regulatory Asset Base (RAB) (see Section 7.2)</li> <li>• Pipeline asset lives (see Section 7.5).</li> </ul> <p>Our proposed revenue requirement for the plant and pipeline for the 2017-22 regulatory period in full operation mode is \$1,184.55m (exclusive of any restart and electricity network charges), which is:</p> <ul style="list-style-type: none"> <li>• 18.6% lower than the approved notional revenue requirements in full operation modes for the 2012-17 regulatory period, on a cost per customer basis (excluding the impact of inflation).</li> <li>• 0.5% lower than the draft decision on the revenue requirements in full operation mode.</li> </ul>	<p>Section 4.1, Section 4.2, Section 5.3, Section 7.2 and Section 7.5</p>
<p><b>Application of Energy and Efficiency Adjustment Mechanisms</b></p>		
<p>15 Include an allowance into prices over the 2017 determination period for the losses made on the sale of SDP's surplus energy while it was shutdown over the 2012 determination period of \$28.9 million or \$5.8 million per year (real \$2016-17 and including financial costs). This is consistent with the Terms of Reference.</p>	<p>We accept the draft decision's methodology on revenue adjustment for the EnAM given they appropriately account for:</p> <ul style="list-style-type: none"> <li>• The losses made on the sale of surplus energy while in water security mode over the 2012-17 regulatory period</li> <li>• The holding losses (reflecting the risk of the cash flows under the EnAM) resulting from these losses being recovered through an annuity over the 2017-22 regulatory period.</li> </ul> <p>Our calculation of the 2016/17 EnAM balance is \$28.8m which translates to an EnAM revenue allowance of \$6.06m per year.</p>	<p>Section 7.7</p>

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
16 Include an efficiency carryover of \$50,000 p.a. for the first three years of the 2017 determination period based on applying the 2012 EfAM methodology.	<p>We accept the draft decision's revenue adjustments for the EfAM.</p> <p>We agree with the continuation of an EAM to provide SDP with additional incentives to pursue efficiency savings. However, a number of amendments to the EAM have the potential to create barriers to the pursuit of efficiency savings initiatives including:</p> <ul style="list-style-type: none"> <li>• An asymmetric treatment of efficiency gains and losses,</li> <li>• An artificial distinction between permanent and temporary efficiency gains and</li> <li>• A 5-year limit on the retention of efficiency savings</li> </ul> <p>We have proposed a number of refinements that align SDP's incentives with those of our customers, including removing the artificial distinction between permanent and temporary efficiencies to minimise regulatory risks and administratively complexities that have the potential to create barriers to the pursuit of efficiency savings initiatives.</p> <p>However, we accept IPART's reasoning that savings should not be carried forward for an indefinite period of time, on the basis that the new operating rules in the 2017 Metropolitan Water Plan mean that operational periods will be increasingly separated in time.</p> <p>We will work with IPART to refine the reporting requirements to ensure they remain fit for purpose over the 2017-22 regulatory period.</p>	Section 3.2 Section 7.7

#### Prudent and efficient past capital expenditure

17 Include in the RAB over the 2012 determination period prudent and efficient capital expenditure for the plant and pipeline as set out in Table 5.1 and 5.2 of the draft decision. IPART's decision accepts SDP's proposed costs.	We have included in the RAB over the 2012 -17 determination period our capital expenditure over the 2012 determination period for the plant and pipeline	Section 6, Section 7
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#### Expenditure on plant and pipeline over the 2017 determination period

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>18 Set the efficient level of SDP's operating expenditure (plant and corporate) in water security (shutdown) mode as outlined in Table 5.3 of IPART's draft decision.</p>	<p>We accept the draft decision to exclude the partial plant test costs over the 2017-22 regulatory period and have excluded these costs in our revised proposal.</p> <p>However we do not agree with the draft decision finding that replacing the membranes is an efficient alternative to the partial plant test and we maintain that the plant will need testing in future periods, particularly given the:</p> <ul style="list-style-type: none"> <li>• 2017 Metropolitan Water Plan will result in the plant being in full operation less frequently,</li> <li>• Onerous financial penalties imposed if SDP does not attain 100% output within 8 months of entering a drought.</li> </ul> <p>We accept the draft decision to reclassify all efficient periodic plant O&amp;M costs as capital expenditure for the 2017-22 regulatory period. However, we note this treatment is not consistent with <i>Australian Accounting Standards</i> for a significant portion of periodic maintenance costs (Section 6 outlines our revised proposal on forecast capital expenditure over the 2017-22 regulatory period).</p> <p>We agree with the draft decision to include an ongoing efficiency target to labour and other fixed costs that reflects industry-wide productivity improvements due to technological improvements.</p> <p>However, we do not agree with the draft decision finding that SDP can provide its water security services over the 2017-22 regulatory period with significantly lower levels of staffing (i.e. the basis for the 2.5% per year cumulative efficiency adjustment) given that:</p> <ul style="list-style-type: none"> <li>• It is not supported with evidence that SDP base year costs are inefficient (i.e. that there is scope for 'catch-up' efficiencies when compared to other comparable entities operating in similar environments).</li> <li>• It incorrectly assumes that "the likelihood of prolonged water security mode" results in a negative change in labour costs despite the draft decision acknowledging the additional maintenance activity on site as the plant ages.</li> </ul> <p>Our revised proposal includes an ongoing efficiency target of 0.25% consistent with other industry-wide productivity improvements targets used by IPART for frontier companies competing in an open market with strong commercial pressures.</p> <p>We accept the draft decision to use a 'base-step-trend' approach to assess the efficient level of corporate costs over the 2017-22 regulatory period. However, the draft decision excludes a number of additional corporate costs that are not included in the base year costs.</p> <p>Our revised proposal adds these costs to the draft decision's corporate costs over the 2017-22 regulatory period.</p>	<p>Section 5.1.1, Section 5.2, Section 5.3, Section 5.4 and Section 6</p>

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>19 Set the efficient level of SDP's operating expenditure (plant and corporate) in plant operation mode as outlined in Table 5.4 of the draft decision.</p>	<p>We accept the draft decision to reclassify all efficient periodic plant O&amp;M costs as capital expenditure for the 2017-22 regulatory period. However, we note this treatment is not consistent with <i>Australian Accounting Standards</i> for a significant portion of periodic maintenance costs (Section 6 outlines our revised proposal on forecast capital expenditure over the 2017-22 regulatory period).</p> <p>We accept the draft decision to use a 'base-step-trend' approach to assess the efficient level of corporate costs over the 2017-22 regulatory period. However, the draft decision excludes a number of additional corporate costs that are not included in the base year costs.</p> <p>Our revised proposal adds these costs to the draft decision's corporate costs over the 2017-22 regulatory period.</p> <p>We also agree with the draft decision to include an ongoing efficiency target to corporate costs that reflects industry-wide productivity improvements due to technological improvements over time.</p> <p>However, we do not agree with the draft decision finding that:</p> <ul style="list-style-type: none"> <li>• An ongoing efficiency target of 0.75% is appropriate to SDP's circumstances given this figure (taken from IPART's 2016 SWC Determination) comprises both a 'catch-up' efficiency component of 0.5% and an 'ongoing' efficiency component of 0.25%.</li> <li>• A 'catch-up' efficiency component is not relevant to SDP given that SDP has been subject to an EfAM mechanism and the draft decision does not demonstrate that SDP's base year corporate costs are inefficient when compared to other comparable entities operating in similar environments.</li> </ul> <p>Our revised proposal includes an ongoing efficiency target of 0.25%, consistent with other industry-wide productivity improvement targets used by IPART for frontier companies competing in an open market with strong commercial pressures.</p>	<p>Section 5.1.2, Section 5.2, Section 5.3 and Section 5.4</p>
<p>20 Set the efficient level of SDP's one-off operating expenditure (including energy) to transition to restart as outlined in Table 5.5 of the draft decision.</p>	<p>We do not agree with the draft decision on the revenue requirements for transition to restart.</p> <p>Specifically, we do not agree with the draft decision on the volume of energy required during restart and our revised proposal maintains the volume of energy in restart submitted in the October 2016 proposal (see Section 5.3).</p>	<p>Section 4.3, Section 5.1.3 and Section 5.3</p>
<p>21 Set the efficient level of SDP's one-off operating expenditure (including energy) to transition to shutdown as outlined in Table 5.6 of the draft decision. IPART's draft decision accepts SDP's proposed costs.</p>	<p>We agree with the draft decision on the revenue requirements for the transition to shutdown.</p>	<p>Section 4.4, Section 5.1.4 and 5.2.4</p>

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>22 Include in the RAB the forecast capital expenditure for the plant as outlined in Table 5.7 of the draft determination over the 2017 determination period. IPART's draft allowance is \$12 million (or 484%) higher than SDP's total proposed costs.</p>	<p>We accept the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period. However, we note this treatment is not consistent with <i>Australian Accounting Standards</i>.</p> <p>Our revised proposal incorporates efficient membrane expenditure as capital expenditure and further membrane replacement has not been included in subsequent restart charges over the 2017-22 regulatory period.</p> <p>We accept the draft decision to reclassify all efficient periodic maintenance costs as capital expenditure however, we note this treatment is not consistent with <i>Australian Accounting Standards</i> for a significant portion of periodic maintenance expenditure.</p> <p>However we do not agree with the draft decision finding that:</p> <ul style="list-style-type: none"> <li>• A proportion of efficient periodic maintenance costs should be excluded due to coverage by the plant warranty</li> <li>• Efficient periodic maintenance costs are consistent in water security and full operation modes.</li> </ul> <p>Our revised proposal:</p> <ul style="list-style-type: none"> <li>• Maintains that all prudent and efficient expenditure should be recovered from customers, consistent with our October 2016 proposal</li> <li>• Accepts that efficient periodic maintenance costs will be consistent in water security and full operation modes for the purposes of the 2017-22 regulatory period only, given the changes to the <i>2017 Metropolitan Water Plan</i> mean that it is unlikely that SDP will be called into operation (and incur higher periodic maintenance costs in full operation) over the 2017-22 regulatory period. Should we enter full operation mode over the 2017-22 regulatory period, SDP would seek to include these additional costs in the RAB at the next regulatory period.</li> </ul> <p>We accept the draft decision to defer the capital expenditure associated with installing the additional pump over the 2017-22 regulatory period and our revised proposal excludes this capital expenditure.</p> <p>We accept the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period.</p> <p>However, to ensure an efficient decision on the amount of membrane replacement, our revised proposal includes:</p> <ul style="list-style-type: none"> <li>• Forecast capital expenditure of \$1 million in 2017-18 for a membrane test kit</li> <li>• Forecast operating expenditure associated with operating and powering the test kit and analysing the test results.</li> </ul>	<p>Section 6.1 and Section 6.2</p>
<p>23 Set forecast capital and operating expenditure over the 2017 determination period of the pipeline as outlined in Table 5.8 of the draft decision. IPART's draft decision accepts SDP's proposed costs.</p>	<p>We accept the draft decision on the efficient pipeline O&amp;M costs over the 2017-22 regulatory period.</p> <p>The draft decision accepts SDP's proposal for no capital expenditure on the pipeline over the 2017 -22 regulatory period.</p>	<p>Section 5.1 and Section 6</p>

### Membrane replacement expenditure

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>24 Set SDP's prudent and efficient capital expenditure at \$30 million for a full membrane replacement on the first restart in the 2017 determination period. These costs would be payable at most once in the 2017 determination period. For clarity, this includes a restart:</p> <ul style="list-style-type: none"> <li>- Triggered by drought response, or</li> <li>- Discretionary use of the plant by third-party customers outside of drought.</li> </ul>	<p>We accept the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period. However, we note this treatment is not consistent with <i>Australian Accounting Standards</i>.</p> <p>However, to ensure an efficient decision on the amount of membrane replacement expenditure, our revised proposal includes:</p> <ul style="list-style-type: none"> <li>• Forecast capital expenditure of \$1 million in 2017-18 for a membrane test kit</li> <li>• Forecast operating expenditure associated with operating and powering the test kit and analysing the test results.</li> </ul>	<p>Section 6.1, 6.2 and Section 5.4</p>
<p>25 Not provide any further allowances for the ongoing replacement of membranes in the 2017 determination period.</p>	<p>See response to draft decision 24.</p>	<p>Section 6.2</p>
<p><b>Ex-post review of uncertain expenditure</b></p>		
<p>26 Not include in the RAB the prudent and efficient capital costs of an extra drinking water pump (\$2.1 million) and a skid test unit (\$1 million) given the uncertainty in timing of this expenditure. Rather, these costs would be re-assessed for efficiency and included (with holding costs at WACC) at the next review of SDP prices.</p>	<p>We accept the draft decision to defer the costs of installing the additional drinking water pump and have excluded this cost from our revised proposal.</p> <p>SDP considers it important to be in a position to make a prudent decision on how many of the membranes to replace when it is next asked to restart (rather than simply replace all the membranes at that time), and that it will need to do so in a timely fashion, particularly given the strengthened financial penalties associated with the modified abatement mechanism proposed in the draft decision. SDP has therefore included capital expenditure on the membrane test kit in its revised proposal.</p>	<p>Section 6.2</p>
<p><b>Energy costs</b></p>		
<p>27 Set energy costs allowances as outlined in Table 6.2 of the draft decision.</p>	<p>See response to draft decisions 28 and 29.</p>	<p>Section 5.3</p>

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
28 Continue to set energy cost allowances based on market based estimates of efficient energy costs.	<p>We do not agree with the draft decision to use a market-based benchmark approach to setting energy costs. This approach:</p> <ul style="list-style-type: none"> <li>Exposes SDP and its customers to significant price volatility between determinations (see Figure 5.1), particularly if the benchmark is updated to reflect recent energy market conditions. We note that accounting for updated market conditions materially increases the draft decision / MJA benchmark price.</li> <li>In operating mode, would result in customers paying materially more in 2017-18 than the energy costs incurred by SDP in providing services, given recent energy market conditions (i.e. accounting for forward market prices as at 30 March, rather than 25 November 2016 used in the draft decision and MJA advice).</li> <li>Is unlikely to be consistent with the TOR (including SDP being financial indifferent), promote efficient price signals regarding the cost of providing our water security and water supply services nor be in the long-term interests of our customers.</li> </ul> <p>It is well accepted under other regulatory frameworks governing infrastructure providers (rather than IPART's approach to setting retail prices) that market-tested long-term contracting costs can be considered a prudent and efficient cost of procuring energy.</p> <p>Our revised proposal maintains the use of efficient long-term contract costs as the basis for setting energy costs and ensures that our customers pay no more than necessary over the 2017-22 regulatory period.</p>	Section 5.3
29 Set efficient benchmark energy unit prices as outlined in Table 6.3 of the draft decision.	See response to draft decision 28.	Section 5.3
30 Set benchmark energy volumes as outlined in Table 6.6 of the draft decision.	<p>We accept the draft decision on the volume of energy used during water security and full operation mode based on actual energy usage over the relevant period.</p> <p>However, we do not agree with the draft decision on the volume of energy required during restart given:</p> <ul style="list-style-type: none"> <li>We are concerned that the draft decision to subtract an estimate of the 'variable' component of energy used during restart risks the 2017 Determination again understating the energy requirements during restart over the 2017-22 regulatory period, as occurred in the 2012 Determination. The cost impact of this decision is approximately \$7.9 million (\$16/17), if SDP was to restart in 2021/22.</li> <li>Our October 2016 proposal specifically excluded any energy associated with the production of water given that this should be recovered via a usage charge and therefore there is no duplication in the recovery of energy costs in restart in our proposal.</li> </ul> <p>Our revised proposal maintains the volume of energy in restart submitted in the October 2016 proposal.</p>	Section 5.3



Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
31 Maintain the cost pass-through mechanism used in the 2012 Determination for SDP's energy network costs.	We agree that retaining the pass-through mechanism for electricity network charges remains appropriate, given the significant uncertainty with electricity network prices over the medium term (i.e. AER merits review and judicial review process).	Section 3.3
<b>Regulatory Asset Base</b>		
32 Set the opening RAB at 1 July 2017 by rolling the historical RAB forward from 2011-12 to 2016-17 as outlined in Table 7.1 of the draft decision.	See responses to draft decision 17 and draft decision 33.	Section 6 and Section 7.2
33 Roll forward the RAB from 1 July 2011 to 30 June 2012 by taking account of actual CPI, but not updating for actual capital expenditure.	<p>We agree with the draft decision's recognition that:</p> <ul style="list-style-type: none"> <li>The roll-forward of the RAB from 1 July 2011 to the start of the 2017-22 regulatory period traverses the sale of the plant, and</li> <li>The 2012 Determination was used by potential purchasers of SDP to guide their bids.</li> </ul> <p>For this reason, we do not agree with the draft decision to update the 2011/12 RAB for actual CPI outcomes.</p> <p>Our revised proposal maintains the opening RAB included in our October 2016 proposal by including the forecast capital expenditure and CPI used in the 2012 Determination.</p>	Section 7.2
34 Correct asset category values used in the 2012 Determination to roll the RAB forward from 1 July 2012 to 30 June 2017.	We accept IPART's corrections to the remaining lives for certain plant asset categories, as well as IPART's correct reclassification of asset values that were transposed in the 2012-17 period. These corrections will affect the time profile of SDP's regulatory depreciation in future years. Our revised proposal reflects these corrections	Section 7.5
35 Correct asset lives used in the 2012 Determination to roll the RAB forward from 1 July 2017.	See response to draft decision 34.	Section 7.5
36 Maintain our standard practice of using allowed depreciation to roll forward the historical RAB.	We do not agree with the calculation of nominal depreciation allowances for the 2012-17 regulatory period. Our revised proposal indexes \$11/12 depreciation allowances by actual CPI over the 2012-17 regulatory period resulting in a higher opening RAB for the 2017 Determination.	Section 7.5
37 Adopt the value of the RAB in each year of the 2017 determination period as set out in Table 7.5 of the draft decision.	<p>SDP has not adopted the RAB values set out in the draft decision because we have adopted a higher opening RAB value, a shorter asset life for the pipeline, and higher capital expenditure allowances.</p> <p>See response to draft decision 22, 33, 36 and 40.</p>	Section 6.2, 7.2, 7.5, and 7.6
<b>Return on capital</b>		
38 Apply a real post-tax WACC of 4.9% for the purposes of calculating an appropriate rate of return on SDP's assets.	<p>We accept the draft decision's approach to setting the rate of return over the 2017-22 regulatory period and we have reflected the draft decision in our revised proposal.</p> <p>We will participate in IPART's WACC review that applies to future regulatory periods.</p>	Section 7.1
39 Set an allowance for return on capital as outlined in Table 7.7 of the draft decision.	See response to draft decision 38.	Section 7.1

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<b>Return of capital</b>		
<p>40 Accept SDP’s infrastructure based asset categories, with minor adjustments, as set out in Table 7.8 of the draft decision, and</p> <ul style="list-style-type: none"> <li>- Adjust SDP’s proposed new and existing asset lives as set out in Table 7.9 of the draft decision, and</li> <li>- Set an allowance for regulatory depreciation as set out in Table 7.10 of the draft decision.</li> </ul>	<p>We accept the draft decision to adjust the plant asset lives.</p> <p>We do not agree with the draft decision to set pipeline asset lives of 120 years based on differing assumed operating environments for different parts of the pipeline. This finding:</p> <ul style="list-style-type: none"> <li>• Does not reflect the pipeline design life</li> <li>• Is not supported by evidence and relies instead on assumption</li> <li>• Is inconsistent with good regulatory practice.</li> </ul> <p>Our revised proposal maintains the pipeline asset life of 100 years based on its design life, consistent with our October 2016 proposal.</p> <p>We accept the allowance for regulatory depreciation for plant assets but not for the pipeline.</p>	<p>Section 7.5 and Section 7.6</p>
<b>Regulatory tax</b>		
<p>41 Adopt the regulatory tax allowance as set out in Table 7.11 of the draft decision.</p>	<p>We accept the draft decision’s approach to setting the regulatory tax allowance over the 2017-22 regulatory period and we have used this approach for the purposes of our revised proposal. We have updated the tax allowances for changes resulting from our proposed capital expenditure (see Section 6.1).</p> <p>However while we agree with the draft decision, we note that:</p> <ul style="list-style-type: none"> <li>• The complexity of applying different tax rates in different years of the regulatory period can be avoided through a targeted cost pass through mechanism. This avoids the need for the 2017 Determination to set allowances and resulting prices for a range of possible regulatory and taxation scenarios</li> </ul> <p>Tax costs should also be included in the membrane service charge. We have incorporated taxation costs by applying a pre-tax WACC on membrane assets. This avoids further complexities associated with deriving a series of notional tax depreciation allowances and tax building block components for membrane depreciation based on a contingent event (restart).</p>	<p>Section 7.3</p>
<p>42 Maintain the current statutory corporate tax rate of 30% to calculate SDP’s taxation allowance for the purposes of setting prices over the 2017 determination period,</p>	<p>See response to draft decision 41.</p>	<p>Section 7.3</p>
<p>43 Adopt SDP’s proposed approach to the treatment of tax loss carryovers for the distribution pipeline.</p>	<p>We accept the draft decision’s approach to setting the regulatory tax allowance over the 2017-22 regulatory period and we have used this approach for the purposes of our revised proposal. However while we agree with the draft decision, we note that tax costs should also be allowed for when determining the membrane service charge.</p>	<p>Section 7.3</p>
<b>Price structures</b>		

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>44 Split water service charges into:</p> <ul style="list-style-type: none"> <li>- A base service charge (\$/day), reflecting SDP's efficient fixed costs when in water security (shutdown) mode, and</li> <li>- An incremental service charge (\$/day), reflecting the difference in SDP's efficient fixed costs between water security (shutdown) and plant operation modes.</li> </ul>	<p>We accept the draft decision's approach to split the existing water service charges into a base service charge and an incremental service charge</p> <p>We have reflected the new price structure for making the plant available in our revised proposal.</p>	<p>Section 8.1 and Section 9.1</p>
<p>45 Retain a water usage charge (\$/ML) for supplying non-rainfall dependent drinking water</p>	<p>We agree with the draft decision that retaining a water usage charge (\$/ML) over the 2017-22 regulatory period remains appropriate.</p>	<p>Section 8.3 and Section 9.1</p>
<p>46 Continue transition charges, which reflect the efficient one-off operating costs of moving from shutdown into plant operation mode and vice versa.</p>	<p>We agree with the draft decision to continue with transition charges that reflect the underlying costs of moving between modes.</p> <p>We agree with the draft decision on the level of the transition to shutdown charge, however, we do not agree with the draft decision on the transition to restart charge as it excludes a significant volume of energy associated with the transition to restart.</p> <p>Our revised proposal includes a transition to restart charge that reflects the volume of energy in restart submitted in the October 2016 proposal.</p>	<p>Section 8.5 and Section 9.1.</p>
<p>47 Ensure transition charges (for restart and shutdown) are payable only once. Either:</p> <ul style="list-style-type: none"> <li>- When triggered by dam storage levels when the plant is responding to drought; or</li> <li>- Upon notice by a customer or cease supply outside drought.</li> </ul>	<p>We agree with the draft decision to continue with transition charges that reflect the underlying costs of moving between modes.</p> <p>However, we do not agree with the level of the transition to restart charge (see Section 9).</p>	<p>Section 8.5</p>
<p>48 Continue to set a mode-independent pipeline charge.</p>	<p>We agree with the draft decision to retain mode-independent pipeline charges over the 2017-22 regulatory period. While the plant and pipeline are complementary assets that are both required to provide our services, there may be transparency benefits in retaining separate charges.</p>	<p>Section 8.4 and Section 9.1</p>

#### Cost sharing rules

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>49 Change the cost sharing rules in the event that SDP serves multiple customers to reflect the desalination plant's primary role as a drought response measure, such that:</p> <ul style="list-style-type: none"> <li>- Base service charges (and pipeline service charges) are always paid for by impactors</li> <li>- Water usage charges are always paid for by beneficiaries, and</li> <li>- Incremental service charges and transition charges are paid by impactors when the plant operates as a drought measure and beneficiaries when it operates commercially outside of drought.</li> </ul>	<p>We accept the draft decision's approach to cost sharing over the 2017-22 regulatory period for the purposes of our revised proposal given they are unlikely to be material issues over the 2017-22 regulatory period.</p> <p>However, we have some concerns with the draft decision's cost sharing framework relating to the administration and implementation of the proposed arrangements in the potential absence of any contractual obligations between SDP and future impactors. We recommend this framework be reconsidered in future periods to ensure it is not a barrier to competition emerging in the market.</p>	Section 8.6
<p>50 Define impactors as bulk water users who directly affect Greater Sydney's water storage levels and cause the need for SDP to exist. Specifically, impactors source water from dams supplying Greater Sydney (WaterNSW) and from the desalination plant (SDP) when it operates.</p>	See response to draft decision 49.	Section 8.6
<p>51 Share base service charges between impactors based on their proportion of total system draw that day.</p>	See response to draft decision 49.	Section 8.6
<p>52 Share incremental service charges 'on the day' between:</p> <ul style="list-style-type: none"> <li>- Impactors during drought based on their proportion of total system draw that day, and</li> <li>- Beneficiaries outside drought based on the proportion of desalinated water sold that day</li> </ul>	See response to draft decision 49.	Section 8.6
<p>53 Share one-off transition charges (to restart and shutdown):</p> <ul style="list-style-type: none"> <li>- Between existing impactors based on their total system draw over the 12 months prior to restart for drought and the entire drought episode prior to a shutdown on the completion of drought, and</li> <li>- Equally by the beneficiaries that request the restart or shutdown outside drought (i.e. issue a notice for SDP to start or cease supply).</li> </ul>	See response to draft decision 49.	Section 8.6

#### Treatment of membrane replacement costs

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
<p>54 Establish a separate membrane asset base (membrane RAB) as set out in Table 10.1 of the draft decision:</p> <ul style="list-style-type: none"> <li>- With an opening value of \$30 million in the year of the first restart</li> <li>- Adopting an asset life for membranes of 8 years</li> <li>- Not adding any further capital expenditure for the ongoing replacement of membranes, and</li> <li>- Rolling forward the membrane RAB until the membranes fully depreciate.</li> </ul>	<p>We accept the draft decision to establish a membrane asset base and we have reflected the draft decision in our revised proposal.</p> <p>Although it creates complexity, this draft decision:</p> <ul style="list-style-type: none"> <li>• Facilitates the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period.</li> <li>• Ensures that customers only pay for membrane replacement costs when they are required.</li> </ul>	Section 7.4
<p>55 Set separate charges to recover the capitalised costs of a full membrane replacement over the 2017 determination period, which includes the:</p> <ul style="list-style-type: none"> <li>- Schedule of membrane service charges as outlined in Table 10.2 of the draft decision, and</li> <li>- One-off charges for residential membrane costs as outlined in Table 10.3 of the draft decision.</li> </ul>	<p>We agree with the draft decision's approach to set a separate membrane service charge, however, we note that the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period is not consistent with <i>Australian Accounting Standards</i>.</p> <p>We have reflected the new price structure for making the plant available in our revised proposal. We note that tax costs should also be allowed for when determining the membrane service charge.</p>	Section 8.2 and Section 9.1
<p>56 Apply the following charging rules for membrane costs:</p> <ul style="list-style-type: none"> <li>- Membranes paid in full by impactors when the plant is triggered by drought,</li> <li>- Membranes paid in full by beneficiaries when the plant operates outside drought, and</li> <li>- Membrane costs revert to impactors if drought occurs before they are paid in full by beneficiaries.</li> </ul>	See response to draft decision 49.	Section 8.5
<p>57 Review the prudent and efficient capital costs of membranes associated with supply for emergency response to Sydney Water (i.e. exceptional circumstances specified in the Water Supply Agreement) ex-post at the next determination period.</p> <ul style="list-style-type: none"> <li>- Where appropriate, these costs would be rolled into the historical RAB, including holding costs using the relevant WACC.</li> <li>- These membranes costs would be paid in full by impactors.</li> </ul>	<p>SDP accepts that the cost of membranes associated with supply for emergency response to Sydney Water will be subject to ex-post at the next determination period</p> <p>SDP also accepts that these membrane costs would be paid for in full by impactors under the cost sharing (see response to draft decision 49).</p>	Section 8.5

## Draft prices

Draft decision	Overview of SDP response to draft decision	SDP revised proposal reference
58 Set draft prices for the 2017 determination period as outlined in Table 11.1 of the draft decision.	<p>We do not agree with the draft decision on:</p> <ul style="list-style-type: none"> <li>• The base service charge for the plant in water security mode, given it does not reflect our proposed notional revenue requirements (See Section 4.1).</li> <li>• The incremental service charge for the plant in full operation mode, given that it does not reflect our proposed notional revenue requirements (see Section 4.2).</li> <li>• The membrane service charge given it does not account for forecast tax costs. We also note that the draft decision to reclassify all efficient membrane replacement costs as capital expenditure for the 2017-22 regulatory period is not consistent with <i>Australian Accounting Standards</i>.</li> <li>• The usage charge for the plant in full operation mode, given that it does not reflect our proposed notional revenue requirements (See Section 4.2).</li> <li>• The pipeline charge given it does not reflect our proposed notional revenue requirements (see Section 4.1)</li> <li>• The transition to restart charge as it excludes a significant volume of energy associated with the transition to restart. Our revised proposal includes a transition to restart charge that reflects the volume of energy in restart submitted in the October 2016 proposal of 79,652 MWh.</li> </ul> <p>We agree with the draft decision on the transition to shutdown charge.</p>	Section 9.1



## Appendix 2 Proposed changes to the form of regulation

No appendices.

## Appendix 3 Proposed changes to the incentive and risk management framework

### 3.1 Proposed changes to the abatement mechanism

#### Key messages

- SDP understands the importance of ensuring that the plant is able to run at full capacity at times when it is needed, and it takes its responsibilities to provide a non-rainfall-dependent supply of water at times of shortage very seriously. Indeed, many of the actions outlined in this submission are directed towards ensuring that the plant can operate at full capacity when it is called upon to do so.
- SDP firmly believes that it should be held accountable for its performance in fulfilling its water security role and that linking this to financial incentives is consistent with sound commercial practice. SDP supports the retention of an abatement mechanism which appropriately incentivises SDP to maintain and operate the plant and pipeline and ensure that it can supply water at full production levels when required to do so.
- While SDP continues to support an abatement mechanism which provides strong financial incentives to ensure it operates at full capacity when it is called upon to do so, it is concerned that the some of the amendments set out in the draft decision:
  - Are asymmetric and consequently focus solely on imposing penalties for under-performance, without duly recognising over-performance
  - Could impose unreasonably punitive and arbitrary penalties by carrying over the abatement factor to fixed charges when the plant is returning to full production
  - Create risks associated with distinguishing between force majeure events that are insurable and those that are not, which will require clarification from IPART.
- We have proposed some further adjustments to ensure the abatement mechanism better achieves its underlying objectives and in particular to ensure it enables SDP to fully respond to drought.

#### 3.1.1 What is the abatement mechanism?

In its 2012 Determination IPART established a mechanism to abate the water service charge (**WSC**) levied by SDP if it fails to provide desalinated water services when otherwise required to do so under the MWP. The stated rationale for this abatement mechanism is to ensure that “while SDP is financially indifferent as to whether or not it supplies water, it also has no incentive to withhold supply when available dam storages are below 70% or until levels rise again above 80%”.

This mechanism reduces the daily WSC applicable in that day’s full operation mode if the average production of the preceding 365 days of full production is less than nameplate capacity (i.e. 250ML/day). In calculating the average daily production over 365 days of full production, shutdown event days and force majeure events are excluded.

The abatement factor operates via the term: “Available Capacity/Total (nameplate) Capacity” (AC/TC). If the average daily volume for the past 365 production days (AC) is less than 250ML/day (TC) the WSC is reduced (i.e.  $AC/TC < 1$ ). AC cannot exceed nameplate capacity.

For example, if there is a month-long engineering fault that limits SDP production and reduces the calculated AC to 235 ML, then the abatement mechanism would operate to reduce the WSC to 94% (=235/250) of its full level.

- If production continues at 250 ML per day for the following year, the daily WSC would remain at 94% (of its full level) for the 11 months following the fault (while the period of reduced production during the 'fault month' continues to be included in calculations of AC). The daily WSC would then progressively return to 100% of its full level over the twelfth month as fewer of the days of the fault month are included in the calculation of 'average daily volume for the past 365 production days'.
- If production continues at a rate higher than 250 ML after the 'fault month', the daily WSC will return to 100% of its full level in a period less than 12 months. For example, if production continues at 255 ML, then the calculated AC will increase from 235 ML to 250 ML over a period of three months. After one month the daily WSC will be 96% of its full level, after two months the charge will be at 98% of its full level, and at the end of three months it will be at 100%. Once AC/TC has reached 100%, the ratio does not further increase because AC cannot exceed nameplate capacity.

### 3.1.2 SDP October 2016 proposal

SDP supported an abatement mechanism which provides strong financial incentives to ensure it operates at full capacity when it is called upon to do so. SDP agrees that it should be held accountable for its performance in fulfilling its water security role and that linking this to financial incentives is consistent with sound commercial practice. However, in order for an abatement mechanism to best achieve its objective, SDP submitted that the abatement mechanism needs to be designed in such a way that the financial incentives:

- Relate directly to SDP's performance in ensuring the plant is able to maximise production when required to do so through actions within its control. SDP should not be penalised where production is not maximised because of factors outside of its control.
- Do not contain any perverse incentives for SDP to act in any way contrary to optimising its role in water security.

In this regard we identified several concerns with the current mechanism:

- The abatement mechanism creates a perverse incentive for SDP to discharge high quality drinking water to the ocean in a period of low water availability when restarting the plant:
  - It can take up to eight months before the plant becomes fully operational after being in water security shutdown, although after about four months, SDP will progressively commence producing potable water that meets the standard required by SWC. Under the definition of the Restart Period in the 2012 Determination, the period ends as soon as SDP supplies water to a customer. As SDP would not yet be producing 250ML per day, supplying water to SWC as the plant is restarting would result in SDP's water service charge immediately being abated. This provides SDP with an incentive to dispose of any water that is produced during the ramp-up period (i.e. return it to the sea), rather than supplying it to SWC, in order to avoid being penalised.
- Under some circumstances the current abatement mechanism could impose financial penalties on SDP when production is curtailed due to factors outside its control.
  - The current mechanism excludes shutdown event days and force majeure events from the calculations consistent with the principle that SDP should not be penalised for events outside its control. This feature should be retained in the abatement mechanism. However, other circumstances where production of the plant may be curtailed other than through factors within SDP's control (e.g. where SWC are unable to receive full supply) are not adequately addressed in the current mechanism. The potential consequences for abatement of this lost opportunity have been recognised by SWC and are addressed in the WSA.

SDP proposed a number of changes to the abatement mechanism to ensure it is best able to achieve its objectives and avoids any perverse incentives, that any financial incentives are proportionate and symmetric in regard to SDP's role in water security, and to align the mechanism with the design parameters of the plant. In particular, SDP proposed:

- Introduction of a 'grace period' so that SDP is not subject to abatement during the period between being instructed to switch on and producing water at 100% of capacity. This will remove the incentive for SDP to dispose of water to the sea rather than supply it to SWC. SDP proposes a grace period of 8 months from being instructed to switch on, on the basis that this represents a reasonable period for restart, after which SDP would be considered to be in a plant operating period for the purposes of charging. Any delays beyond this period would be subject to the abatement mechanism.
- Changes to the calculation methodology to better align the financial incentives of the mechanism with the impact of SDP's production performance on water security outcomes by adjusting the recorded volumes of production on days where production is curtailed due to actions of others (e.g. SWC being unable to receive full supply) by deeming production for those days to be the higher of 250 ML or the average of the preceding five Availability Days of unconstrained production.

SDP also noted (p.35) that it had agreed with SWC on an opening "Availability Capacity" of 260.026ML for the next plant operation period. This figure is based on the prior operating history of the plant, namely plant production levels on "Availability Days" after the plant commenced operations and until storage levels reached 80 per cent.

### 3.1.3 IPART draft decision

In its Draft Decision IPART proposes to retain the abatement mechanism but sought to strengthen the abatement mechanism to ensure SDP fully responds to drought by broadening its application and modifying a number of its elements. In particular IPART proposes to:

- Broaden the abatement mechanism so that from 1 July 2018 it would apply uniformly to all days during drought (i.e. including shutdown and restart days as well as operation days), including during the grace period (see below).
- Not apply abatement to service charges on days where SWC requests water under emergency response and days when supply capacity is reduced as a result of an uninsurable force majeure event.
- Not include days and volumes in the calculation of the abatement factor for days when SDP reduces production in order to comply with a law, binding direction or an order or similar made under law.
- Include days and volumes in the calculation of the abatement factor for days when SWC is unable to accept desalinated water but rather place the onus on SWC to reimburse SDP for any under-recovery of costs through payment outside of the Determination.
- Provide SDP with an 8-month grace period when the plant first responds to drought during which time neither the days nor any volumes supplied on those days are counted towards the calculation of the abatement formula.
- Align the abatement mechanism with the design parameters of the plant by:
  - Removing the 250 ML cap on daily volumes for calculation of the abatement factor applied to daily fixed charges.
  - Retaining the averaging period of 365 days for calculation of the abatement factor.
- Introduce a true-up of fixed charges to claw back any over-recovery of revenue over a single episode of drought, which includes holding costs calculated using the relevant WACC, and is payable at the end of a drought response period.
- Reset the abatement factor to unity, if the plant exits drought with an abatement factor above unity.

- Retain and use the abatement factor, if the plant exits drought with an abatement factor less than unity.
- Deem the Daily Volume on 364 Availability Days preceding the first Availability Day equal to 250 ML per day for the 2017 determination period where no prior history exists.

### 3.1.4 SDP revised proposal

In this revised proposal SDP has adopted a number of the proposed revisions to the mechanism outlined in the Draft Decision. In particular, SDP accepts that:

- The mechanism be broadened to apply to all days during a drought response period, regardless of the mode the plant is in, as proposed in the draft decision (except that abatement should not apply during the grace period).
- Service charges should not be abated on days where SWC requests water under an Emergency Response Notice and the days and volumes for such days should not be included in the calculation of the abatement factor.
- Days when SDP reduces production in order to comply with a law, binding direction or an order or similar made under law should not be included (days and volumes) in the calculation of the abatement factor.
- SDP would seek recompense from SWC outside of the Determination rather than applying abatement to days when SWC is unable to accept desalinated water.
- The abatement mechanism be better aligned with the design parameters of the plant by removing the 250 ML cap on daily volumes for calculation of the abatement factor applied to daily fixed charges and retaining the averaging period of 365 days for calculation of the abatement factor.
- A true-up of fixed charges be introduced where any revenues in excess of regulated service charges over a single episode of drought, including holding costs calculated using the relevant WACC, is refunded at the end of a drought response period.

We have also proposed some further adjustments to ensure the abatement mechanism better achieves its underlying objectives and in particular to ensure it enables SDP to fully respond to drought. In this context, it is critical to note that SDP's Network Infrastructure Licence contains requirements for SDP to maximise the production of water when SCA's storage levels fall below 70% and until they rise above 80%. This licence condition clearly obliges SDP to supply water above the nameplate capacity of 250 ML/day if at all possible – with the 250 ML/day average over 365 days being a minimum expectation. In our view a number of the arrangements proposed by IPART in the draft decision work counter to this licence obligation. Our revised proposal also recognises several recent developments since our October 2016 proposal, namely the new operating rules in the 2017 Metropolitan Water Plan (MWP) which mean that SDP will operate even less frequently in future than it would have under the current 70/80 Rule; and the agreed reinstatement date of the plant of 13 December 2018.

As noted above, while SDP continues to support an abatement mechanism which provides strong financial incentives to ensure it operates at full capacity when it is called upon to do so, it is concerned that the some of the amendments set out in the draft decision:

- Are asymmetric and consequently focus solely on imposing penalties for under-performance, without duly recognising over-performance
- Could impose unreasonably punitive and arbitrary penalties by carrying over the abatement factor to fixed charges when the plant is returning to full production
- Create risks associated with distinguishing between force majeure events that are insurable and those that are not, which will require clarification from IPART.

Our proposed adjustments are as follows:

- That the broadening of the abatement mechanism to apply to all days during a drought response period should apply from 13 December 2018 (rather than 1 July 2018) in line with the timeframe in the Agreed Reinstatement Plan that SDP has put in place with the NSW Government following the extreme storm event at Kurnell in December 2015.
- SDP's total operating expenditure allowances over the 2017 regulatory period should be increased by \$1.1m (rounded, \$2016/17) to reflect the additional costs of obtaining reasonable BI insurance coverage for abatement during drought following an insurable Force Majeure event.
- Greater certainty needs to be provided in the Determination around how the term "uninsurable force majeure event" will be interpreted and this is best done by strengthening the links with IPART's existing role in monitoring SDP's compliance with the insurance provisions in the WICA licences.
- Service charges should not be abated during a grace period under any circumstances (but neither should the days or any volumes supplied during a grace period be included in the calculation of the Available Capacity term in the abatement formula).
- At the end of a drought response period the abatement factor should be reset to unity through deeming the Daily Volume on 364 Availability Days preceding the first Availability Day equal to 250 ML per day for the next drought response period (noting that this means SDP is foregoing its current 260 ML factor agreed with SWC).

SDP continues to support an abatement mechanism which provides strong financial incentives to ensure it operates at full capacity when it is called upon to do so, provided the incentives are proportionate, symmetric and fully consistent with SDP best fulfilling its water security role.

The following discussion provides more detailed analysis supporting our revised proposal.

#### *3.1.4.1 Broadening of abatement to all modes during drought*

A key change to the mechanism proposed in the draft decision is to broaden its application so that abatement would apply on all days during a drought response period, regardless of the mode the plant is in (whereas previously abatement did not apply in restart or shutdown modes).

This broadening of the scheme places more onus on SDP to achieve full production within 8 months from restart and then to manage the plant to achieve the 250 ML average over a drought response period. At the same time, SDP recognises that the removal of the 250 ML/day cap on daily volumes for calculation of the abatement factor provides SDP with greater flexibility to achieve the 250 ML/day requirement on average over a drought period, including provision for up to 21 shutdown days for maintenance, without incurring a net financial penalty.

While SDP does not shrink from facing these more stringent financial penalties if it does not achieve 100% production within 8 months of a drought trigger and then maintain this level on average over a drought response period, a necessary corollary is that SDP is able to undertake and finance the activities required to assure itself that it is able to achieve these challenging performance standards (e.g. periodic partial plant tests). Recent experience with the Wonthaggi desalination plant in Victoria highlights the potential issues which can be encountered when restarting a desalination plant after a significant period of shutdown. Plant testing would allow the testing of integrated civil, mechanical and electrical assets, in addition to the membranes. Some critical pieces of equipment can have ordering lead times of over 6 months and therefore it is essential for any issues to be identified prior to the next restart to ensure water security.

Moreover, SDP notes that the Victorian Government has announced that it intends to continue ordering water from the Wonthaggi Plant for the next three years to reduce the risk of further technical problems at the plant.



Another caveat (discussed in more detail below) is that abatement should not apply during a grace period under any circumstances. In addition, we propose that abatement factor be set to unity at the end of a drought response period as also discussed below.

SDP also proposes that this broadening of the abatement mechanism should take effect from 13 December 2018 (rather than 1 July 2018) in line with the timeframe in Agreed Reinstatement Plan that SDP has put in place with the NSW Government. This is necessary to avoid the potential for the new abatement mechanism to impose retrospective penalties from the December 2015 tornado event.

#### 3.1.4.2 Abatement for events outside SDP's control

While SDP supports financial incentives in the abatement mechanism that relate directly to its actions within its control that affect the plant's production, it does not consider it should be penalised through the abatement mechanism for factors outside its control.

We note that IPART states that in considering changes to the mechanism, it has been mindful of the difference between events that are within SDP's control and those that fall outside its control. Nevertheless, IPART proposes that abatement should apply to a number of situations outside of SDP's control.

The most significant of these is that the Draft Decision proposes that abatement of daily service charges should still apply to days where supply capacity is reduced as a result of a force majeure event if insurance against that FM event is available on reasonable commercial terms. IPART states that this approach provides the best value for customers while ensuring SDP continues to recover its fixed costs through its insurance. IPART also states that they:

*“are not extending abatement to force majeure events for which insurance is not available on reasonable commercial terms (i.e. that fall outside the scope of most insurance policies). We consider it would be unreasonable to penalise SDP for events outside its control where it cannot rely upon insurance.”*

Thus, for example, IPART states that where force majeure events are uninsurable (e.g. acts of war), abatement would not apply. However, it suggests that such events are so rare and of such magnitude that SDP may need to request to reopen the determination, for instance in light of a need to repair or rebuild the plant.

IPART considers (p.33) that in broadening the abatement mechanism in this way, it has “balanced providing value for SDP's customers while ensuring SDP is not unduly exposed to risk.” IPART also states that it has “included an allowance in the 2017 Determination period for SDP's insurance premiums to ensure that its coverage is sufficient given its operating environment (including our determination, and its abatement provisions).

SDP accepts that it is reasonable during a drought period for insurance rather than customers to bear the risk of loss of revenue from an insurable force majeure event. However, it considers that several refinements to IPART's proposal are necessary to ensure it operates in a way which is consistent with the principle that SDP should not be penalised for events outside its control. In particular:

- SDP's total operating expenditure allowances over the 2017 regulatory period should be increased by approximately \$1.1 million (\$2016/17) to reflect the additional costs of obtaining reasonable BI insurance coverage for abatement during drought following an insurable Force Majeure event.
- Greater certainty needs to be provided in the Determination around how the term “uninsurable force majeure event” will be interpreted and this is best done by strengthening the links with IPART's existing role in monitoring SDP's compliance with the insurance provisions in its WICA licences.

The first issue relates to the expenditure allowance for insurance premiums SDP will incur in extending its BI insurance to cover loss of revenue from abatement should a FM event occur. SDP does not agree that

the allowance in the 2017 Determination period for SDP’s insurance premiums is adequate to ensure that its coverage is sufficient given its operating environment (including our determination, and its abatement provisions)”. The draft determination included SDP’s forecast insurance premiums which were premised on the force majeure protections in the 2012 Determination, namely no abatement following a force majeure event. IPART’s extension of the abatement mechanism to insurable force majeure events during drought will require SDP to increase the coverage, and therefore the cost, of its Business Interruption (BI) insurance to minimise the risk of under-insurance. Following the release of the draft determination, SDP commissioned Aon, to review its BI insurance coverage. Aon recommended that, consistent with normal business practice, SDP extend the indemnity coverage period from 36 to 60 months. Aon also recommended that SDP increase the sub-limit for public utilities to allow 12 months coverage for a loss of power to the site. Aon has estimated the cost of this additional coverage to be approximately \$1.1 million over the 2017-22 regulatory period (refer Appendix 5-2).

The second issue relates to providing greater certainty on how IPART will determine whether an FM event was one where insurance against that FM event was available on reasonable commercial terms (and hence abatement applies), or was a FM event for which insurance was not available on reasonable commercial terms (and hence abatement would not apply).

If a force majeure event were to occur which rendered the plant inoperable for a significant period of time, SDP’s service charges would be severely abated. For example, an event which rendered the plant inoperable for period of 12 months or more would result in SDP’s service charges being set to zero until the plant was again able to supply water. These potential losses in revenue amount to hundreds of millions of dollars. Even a shorter interruption (or series of interruptions) to the plant’s ability to produce water such as powers supply outages, could led to significant revenue losses.

IPART’s assumption appears to be that SDP would be able to insure against any and all such losses in revenue by purchasing BI insurance, with the exception of uninsurable force majeure events against which SDP would not have been able to obtain insurance, on reasonable commercial terms.

Even with the expanded coverage recommended by Aon, SDP notes that there may be circumstances in which BI insurance policies on “reasonable commercial terms” may not provide full insurance cover for FM events. Standard BI policies typically contain various limitations, exclusions and deductibles. These include financial limits on the amount of insurance payable, defined indemnity periods, deductibles, and cash flow delays in settling claims. Appendix 2-1 of SDP’s November 2016 supplementary submission provided detail on the different ways in which an FM-related outage could go beyond the level of protection that BI coverage affords. Also, business interruption may occur from an event which does not necessarily involve damage to the plant – such as state-wide industrial action which would be beyond SDP’s control – and which may not be covered by BI.

Under these circumstances, BI insurance procured by SDP may provide only partial coverage of losses arising from FM events. In other words, SDP would face a ‘gap’ between the total value of the loss and the insured amount—even though SDP had obtained BI insurance on “reasonable and commercial terms”.

To the extent that IPART seeks to replicate the outcomes in efficient, competitive markets, it has two options for dealing with an insurance gap of the sort identified above:

- IPART could allow SDP to self-insure just as a business in a competitive, non-regulated market would. However, this would add complexity to regulatory process because this would involve forecasting future non-insured losses. If the self-insurance premium is estimated with error, SDP’s customers could end up paying more or less than the actual amount of future losses. Moreover, the calculation of a fair self-insurance premium would require the quantification of the probability of events that cannot be fully insured and the extent of any shortfall.
- An alternative, much simpler approach would be to ensure SDP is able to recover from customers any losses that cannot be recouped from conventional BI insurance. The abatement mechanism would

provide for this as long as it guaranteed that SDP was able to continue recovering its revenues from customers if such an event occurred. This approach also ensures that customers would not end up paying more than the actual amount of future losses not covered by efficient BI insurance.

This highlights the need for more precision about the term “a FM event against which SDP would not have been able to obtain insurance, on reasonable commercial terms”. Moreover, greater certainty over how this term will be interpreted by IPART for the purposes of deciding whether an event which reduces the output of the plant or renders the plant inoperable will result in SDP’s charges being abated or not abated needs to be provided now. If such assessments are left until the event has occurred (i.e. an ex post assessment), SDP is subject to significant regulatory risk which translates into significant financial risk.

Under its licences, SDP is required to maintain appropriate insurances and provide copies of these to IPART. SDP therefore proposes that by accepting SDP’s insurance policies as appropriate as part of its licensing function, SDP should only ever be abated for events (and duration of consequences of these events) which are covered by these insurance policies – as IPART’s licensing function effectively encompasses an ex ante assessment of what BI is available on reasonable commercial terms.

SDP therefore proposes that IPART should explicitly reflect this in the Determination itself by making it clear that service charges will not be abated for any force majeure events which are not fully covered by SDP’s insurance policies accepted by IPART as satisfying its licence conditions.

Another event outside of SDP’s control which may lead to reduced production from the plant but which IPART is nevertheless proposing should be days for which the days and volumes be included in calculation of the abatement factor is where SWC is unable to accept desalinated water. IPART states that while it considers that, in principle, SDP should not be financially penalised when SWC is unable to receive the full supply of water, it considers that this should be addressed through financial recompense paid by SWC to SDP outside of the determination, as this would ensure the financial penalty rests with SWC, rather than passed through to its customers in unabated service charges. SDP accepts IPART’s position but notes that enforcing this arrangement with SWC will occur outside of the determination which does not appear consistent with IPART’s views expressed elsewhere in the draft determination report opposing unregulated pricing agreements. It is also not clear that IPART’s position is consistent with the financial indifference principle under the Terms of Reference.

#### 3.1.4.3 *Grace period*

SDP supports the introduction of an eight month grace period into the abatement mechanism so that SDP is not penalised for supplying water at less than full production levels during the time it takes to ramp up to full production.

While we continue to support the concept of a grace period being included in the abatement mechanism, the arrangements proposed by IPART in the draft decision have the potential to impose asymmetric, punitive and arbitrary penalties on SDP.

In our view the grace period should be treated as a genuine grace period reflecting the ramp-up of the plant in a new drought and therefore no aspect of the abatement mechanism should apply during this ‘protected’ period.

In contrast, under the proposed arrangement in the draft decision, an abatement factor would apply to daily service charges levied during a grace period to reflect past performance during previous droughts. In SDP’s view this is unreasonable on several grounds:

- SDP could incur punitive financial penalties over the first eight month period of a new drought. For example, assuming a carried forward abatement factor of 0.9, SDP would under-recover its efficient costs by 10% or around \$8.9 million whilst the plant was restarting.

- Under the draft decision proposal any volumes of water supplied during the grace period are not included in the abatement calculation, there is nothing SDP can do over the eight month grace period (unlike during an operation period) to progressively ameliorate the financial penalty, even though any water supplied during the grace period reflects good performance during the beginning of the latest drought.
- If SDP has under-performed during the previous drought it will have already had potentially significant financial penalties imposed on it, and would face further penalties should it fail to return to and maintain full production within 8 months of the next drought. Imposing abatement during the grace period serves no useful purpose in ensuring SDP fully responds to drought. Arguably, the main incentive effect it would have is to encourage SDP to maximise production as a drought is coming to an end, which would not seem to be appropriate.
- As discussed in more detail below, the asymmetric nature of the carryover of the abatement factor after drought means that SDP would only ever suffer a financial penalty for poor past performance and never receive a benefit (in terms of offsetting potential losses) from good past performance. This is not balanced or reasonable.
- The abatement factor applied to service charges during the entire 8 month grace period at the start of the next drought could be largely arbitrary:
  - It would only reflect SDP's performance during the last 12 months of the previous drought, rather than its overall performance during the previous drought. For example, if over a five year drought SDP supplied on average above 250 ML/day, but supplied above 250 ML/day for the first four years and under 250 ML/day in the last year, it would face a potentially major financial penalty during the next 8 month grace period despite the fact that during the previous drought it had supplied 250 ML or more per day on average and therefore had successfully delivered its water supply and water security services during the drought period.
  - As the plant is designed to deliver 266ML per day at 94% availability, it is possible for the average production to temporarily fall below 250 ML per day. As SDP cannot control or reliably predict when the off trigger will be reached, it is possible that the previous drought period may end during a scheduled maintenance shutdown resulting in an abatement factor of less than unity. SDP should not be arbitrarily penalised for the cyclical nature of the plant's design due to circumstances beyond its control.
- The application of abatement during restart is not consistent with SDP's Network Operator's Licence which recognises that SDP is not required to maximise production during the restart phase.
- As discussed below, there is likely to be a considerable period of time between droughts so that the link between performance and the imposition of penalties (or rewards if these were to be recognised by IPART) becomes tenuous and there is in effect an inter-generational transfer between customers who experience the first drought and those several decades later who receive lower bills. This does not seem reasonable.
- The effective penalty imposed on SDP for a given production shortfall on any one day would be higher if that day falls within the last 365 days of a drought than if it falls earlier during the drought.

In summary, the proposal to apply abatement during the grace period is not consistent with the intent of the abatement mechanism to provide an incentive for SDP to fully respond to a drought, but instead appears to be a device to impose additional arbitrary and punitive penalties on SDP.

SDP therefore proposes that service charges should not be abated during a grace period and that abatement should only be re-applied to daily service charges at the expiry of the grace period.

#### 3.1.4.4 *True-up and carryover of abatement factor*

SDP proposes some changes to the treatment of the abatement factor at the end of a drought response period as outlined in the draft decision.

At the end of a drought response period the abatement factor could be:

- less than unity (if the average volume supplied over the past 365 availability days is lower than the nameplate capacity of the plant of 250 ML/day)
- unity (if the average volume supplied over the past 365 availability days is exactly equal to the nameplate capacity of the plant of 250 ML/day)
- greater than unity (if the average volume supplied over the past 365 availability days is higher than the nameplate capacity of the plant of 250 ML/day).

IPART proposes a true-up mechanism at the end of a drought response period “to avoid over-compensation and remove the incentive for SDP to push production above the technically optimal limit”. Under this mechanism, if the end-of-period abatement factor is greater than unity, the monetary value (including holding costs) of the payments which have been received by SDP over the drought response period in excess of the regulated service charges would be refunded to customers. As noted by IPART, the mechanism is asymmetric: no such true-up would occur if the abatement factor is less than one, as this would defeat the purpose and intent of the abatement mechanism to encourage SDP to fully respond to drought.

SDP does not agree that an abatement factor above unity necessarily implies ‘over-compensation’ or that retention of this additional revenue would provide an incentive for SDP to over-extend the plant. Rather, achieving an abatement factor above unity during a drought response period reflects above-average performance through the supply of additional volumes and prudent management by maintaining a buffer against unexpected outages. It is generally recognised that the most effective regulatory incentive mechanisms provide for rewards as well as sanctions. There are a number of service incentive schemes operating in other regulatory frameworks whereby regulated businesses that out-perform against specified service standards receive financial reward. It would be reasonable for SDP to share in some of the over-performance implied by an abatement factor of greater than unity (e.g. by retaining at least a proportion of the financial payments in excess of the regulated service charges). Nevertheless, SDP proposes to accept the draft decision of fully refunding this to customers, on the proviso that the abatement mechanism is modified to also remove the potential for unreasonable punitive financial penalties by applying abatement to the grace period.

SDP also does not support IPART’s proposed approach in the draft decision to the carryover of the abatement factor at the end of a drought response period. IPART’s proposal involves resetting the abatement factor to unity, if the plant exits drought with an abatement factor above unity; but retaining and using the abatement factor, if the plant exits drought with an abatement factor less than unity, even if SDP had delivered an average of 250ML/day during the drought period.

The underlying logic of carrying forward an abatement factor from one drought to the next is that SDP’s performance should be assessed and reflected in financial incentives over multiple droughts, rather than just a single drought.

In SDP’s view there is a strong argument that each drought should be treated as a separate event and SDP’s performance reflected in financial incentives applying at the time of the event.

This approach recognises the new operating rules in the 2017 Metropolitan Water Plan (MWP) which mean that SDP will operate even less frequently in future than it would have under the current 70/80 Rule meaning that episodes of operating during drought periods will be increasingly disconnected in time.



Consistent with this approach, we propose that the abatement factor be set to unity at the end of each drought period (whether the factor was above or below unity). This approach would have the advantage of simplicity and avoid the potential for SDP to be penalised (or rewarded) for performance from many years beforehand.

This approach is consistent with IPART's treatment of the Efficiency Carryover Mechanism which allows SDP to retain mode-specific savings for up to 5 years, rather for an indefinite period.<sup>1</sup> IPART found that allowing SDP to carryover savings for 5 non-consecutive years would mean it could be a very long time before customers saw any benefit and could be seen to bind future Tribunals over a period longer than two determination periods.<sup>2</sup> SDP believes that this rationale similarly supports the resetting of the abatement factor to 1 at the end of each drought period.

In setting the abatement factor to unity, we propose to adopt the default approach proposed by IPART where there is no history of a synthetic dataset of 365 days x 250 ML) at the end of a drought response period. We note that this means SDP is foregoing its current 260 ML factor agreed with SWC.

However, if IPART decides that the abatement factor should be carried forward over multiple droughts, then this should be symmetric, as it is under the 2012 Determination. It is clearly unreasonable for SDP to be penalised for poor performance over multiple droughts but not given an opportunity to offset such penalties with good performance over the same timeframe.

SDP therefore proposes that should IPART decide to continue the carryover of abatement factors at the end of a drought, this should be applied equally whether it is above or below unity at the end of a drought.

In addition, should IPART decide to continue carryover of historic abatement factors, SDP proposes that its existing abatement factor which it has agreed with SWC, reflecting SDP's prior performance history, should be preserved. The current formulation proposed in the draft decision would not appear to provide for this. In SDP's view this would represent a retrospective expropriation of value through regulation.

### **3.2 Seed Advisory – Costs and Risks of Energy Trading**

Refer separate attachment.

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<sup>1</sup> IPART, Sydney Desalination Plant Pty Ltd Energy Adjustment and Efficiency Carryover Mechanism, March 2017, p40

<sup>2</sup> IPART, Sydney Desalination Plant Pty Ltd Energy Adjustment and Efficiency Carryover Mechanism, March 2017, p41



## Appendix 4 Revenue requirement for our water supply and security services

### 4.1 Detailed Breakdown of Revenue Requirement under all modes

The following tables represent SDP's proposed revenues under all modes.

**Table 4.1: Revenue Requirement for Water Security Mode (\$2016-17)**

	2017-18	2018-19	2019-20	2020-21	2021-22
Fixed Operating Expenditure	17,469,051	17,676,738	17,629,503	18,072,141	17,600,819
Variable Operating Expenditure	-	-	-	-	-
Depreciation	50,164,810	50,270,695	50,290,795	50,426,168	50,561,179
Return on Assets	94,488,420	92,188,891	89,907,653	87,638,814	85,362,809
Return on Working Capital	876,894	859,625	844,531	832,282	821,894
Other	6,113,566	6,113,566	6,113,566	6,113,566	6,063,566
Tax Allowance	6,725,349	7,640,200	8,431,958	9,153,142	9,812,172
<b>Total Revenue Requirement</b>	<b>175,838,091</b>	<b>174,749,716</b>	<b>173,218,006</b>	<b>172,236,113</b>	<b>170,222,439</b>

**Table 4.2: Revenue Requirement for Operating Mode (\$2016-17)**

	2017-18	2018-19	2019-20	2020-21	2021-22
Fixed Operating Expenditure	25,114,357	25,442,012	25,337,769	25,571,687	25,447,093
Variable Operating Expenditure	55,846,808	55,846,808	55,964,243	55,846,808	55,846,808
Depreciation	50,164,810	50,270,695	50,290,795	50,426,168	50,561,179
Return on Assets	94,488,420	92,188,891	89,907,653	87,638,814	85,362,809
Return on Working Capital	1,001,726	984,693	968,692	956,827	947,121
Other	6,063,566	6,063,566	6,063,566	6,063,566	6,063,566
Tax Allowance	6,733,211	7,648,770	8,441,138	9,163,007	9,822,737
<b>Total Revenue Requirement</b>	<b>239,412,899</b>	<b>238,445,436</b>	<b>236,973,856</b>	<b>235,666,878</b>	<b>234,051,313</b>

**Table 4.3: Revenue requirements for transitioning from water security to full operation mode (restart) (per transition event) (\$2016-17)**

	2017-18	2018-19	2019-20	2020-21	2021-22
Total Revenue Requirement	17,381,927	17,381,927	17,382,284	17,381,927	17,381,927

*Note: these costs are one-off costs incurred only when the plant is returning to operating mode following a Water Security shutdown. These costs are not incurred annually*

**Table 4.4: Operating Expenditure for Transition to a Water Security Shutdown (per transition event) (\$2016-17)**

	2017-18	2018-19	2019-20	2020-21	2021-22
Total Revenue Requirement	1,685,901	1,685,901	1,685,901	1,685,901	1,685,901

*Note: these costs are one-off costs incurred only when the plant is transitioning to a Water Security shutdown. These costs are not incurred annually.*

## 4.2 Regulatory asset base roll forward

**Table 4.5: Regulatory Asset Base Roll Forward (\$2016-17)**

	2012/13	2013/14	2014/15	2015/16	2016/17
Opening Balance	2,210,261,977	2,163,188,614	2,115,671,864	2,068,399,139	2,021,214,776
Net Capex	439,224	32,189	296,390	385,050	15,000
Depreciation	47,517,858	47,549,421	47,571,338	47,571,338	47,571,338
Indexation	-	-	-	-	-
Closing Balance	2,163,188,614	2,115,671,864	2,068,399,139	2,021,214,776	1,973,658,603

**Table 4.6: Notional RAB Roll Forward (\$2016-17)**

	2017/18	2018/19	2019/20	2020/21	2021/22
Opening Balance	1,973,658,603	1,925,024,807	1,877,502,650	1,829,733,600	1,782,618,745
Net Capex	2,711,461	3,916,485	3,692,974	4,476,030	3,670,694
Depreciation	51,379,150	51,487,598	51,508,185	51,646,835	51,785,114
Indexation	-	-	-	-	-
Closing Balance	1,925,024,807	1,877,502,650	1,829,733,600	1,782,618,745	1,734,550,209

## 4.3 Tax asset base roll forward

**Table 4.7: Tax asset base roll forward (\$nominal)**

	2017/18	2018/19	2019/20	2020/21	2021/22
Opening Balance	1,369,914,550	1,323,755,164	1,281,387,226	1,241,133,673	1,203,830,061
Capex	2,782,875	4,113,197	3,979,111	4,939,563	4,157,925
Depreciation	48,942,260	46,481,136	44,232,663	42,243,175	40,366,803
Indexation	-	-	-	-	-
<b>Closing Balance</b>	<b>1,323,755,164</b>	<b>1,281,387,226</b>	<b>1,241,133,673</b>	<b>1,203,830,061</b>	<b>1,167,621,184</b>

#### 4.4 Membrane asset base roll forward

**Table 4.8: Membrane asset base roll forward (\$2016-17)**

	2017/18	2018/19	2019/20	2020/21	2021/22
Opening Balance	30,000,000	26,250,000	22,500,000	18,750,000	15,000,000
Capex	-	-	-	-	-
Depreciation	3,750,000	3,750,000	3,750,000	3,750,000	3,750,000
Indexation	-	-	-	-	-
<b>Closing Balance</b>	26,250,000	22,500,000	18,750,000	15,000,000	11,250,000

*Note: The Membrane asset base roll forward is dependent on date of restart. The above table assumes restart in 2017/18.*

## Appendix 5 Forecast Operating Expenditure

### 5.1 Forecast operating expenditure by mode

The tables below show SDP's forecast efficient costs by mode, including operation, shutdown and transition modes.

**Table 5.1: Forecast operating expenditure in Water Security Mode (\$2016-17, \$millions)**

Table redacted

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Operating and Maintenance - Total						
<i>O&amp;M - Plant</i>						
<i>O&amp;M - Pipeline</i>						
Energy Costs						
Other Operating Costs						
<b>Total</b>						

**Table 5.2: Forecast Operating Expenditure in Full Operating Mode (\$2016-17, \$millions)**

Table redacted

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Operating and Maintenance - Total						
<i>O&amp;M - Plant</i>						
<i>O&amp;M - Pipeline</i>						
Energy Costs						
Other Operating Costs						
<b>Total</b>						

*Note: assumes production of 91.3GL/year*

**Table 5.3: Operating Expenditure for Transition to Restart from Water Security Mode (per transition event) (\$2016-17, \$millions)**

Table redacted

	2017-18	2018-19	2019-20	2020-21	2021-22
Operating and Maintenance - Total					
O&M - Plant					
O&M - Pipeline					
Energy Costs					
Other Operating Costs					
<b>Total</b>					

*Note: these costs are one-off costs incurred only when the plant is returning to operating mode following a Water Security shutdown. These costs are not incurred annually.*

**Table 5.4: Operating Expenditure for Transition to a Water Security Shutdown (per transition event) (\$2016-17, \$millions)**

	2017-18	2018-19	2019-20	2020-21	2021-22
Operating and Maintenance	1.69	1.69	1.69	1.69	1.69
Energy Costs	-	-	-	-	-
Other Operating Costs	-	-	-	-	-
<b>Total</b>	1.69	1.69	1.69	1.69	1.69

*Note: these costs are one-off costs incurred only when the plant is transitioning to a Water Security shutdown. These costs are not incurred annually.*

## 5.2 Aon — 2017 Business Interruption Insurance Review

Redacted

## 5.3 Aon — Insurance Risk Profiling and Insurance Gap Analysis

Redacted



Seed Advisory

# Costs and Risks of Energy Trading

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Report for Sydney Desalination Plant

12 April 2017





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# 1 Executive Summary

## 1.1 Introduction

Sydney Desalination Plant Pty Ltd (SDP) has been deemed a monopoly supplier of non-rainfall dependent water. Consequently, the prices it charges to Sydney Water are determined every five years by the Independent Pricing and Regulatory Tribunal (IPART). SDP's current determination expires on 30 June 2017.

IPART released a draft decision (Draft Decision) on SDP's maximum prices in March 2017<sup>1</sup> and a draft methodology paper for the Energy Adjustment Mechanism (EnAM) and Efficiency Carryover Mechanism in March 2017<sup>2</sup>.

The Draft Decision (pg. 54) is seeking to change *'SDP's incentives to prudently manage its surplus energy over the 2017 determination period'*. IPART is seeking to modify the prudence test from one of *'no manifest imprudence'* to a general test of *'the prudence of SDP's energy trading policy and activity'*. In applying this new test IPART would need to assess if SDP's approach to managing energy is prudent which would involve reviewing SDP's energy policy and how this policy was executed given information available at the time.

Given this, SDP may be required to develop and implement an 'energy trading capability' and have engaged Seed Advisory Pty Ltd (Seed) to assist in identifying the risks, capabilities required and costs involved in developing these capabilities.

This report summarises the findings of our analysis.

## 1.2 Overview of scope

In brief, the scope of this project involved undertaking an independent analysis to identify:

- the risks (at a qualitative level) SDP may be exposed to if undertakes energy trading activities;
- the energy trading related capabilities SDP will need to develop; and
- the order of magnitude costs and timeframes associated with their development.

This analysis also recognised the potential relevant services available under the electricity contract with Infigen (refer Section 3.1) and the business context of SDP (as a water utility and not a sophisticated energy trading business).

Section 2.1 outlines the scope of work in further detail including the specific exclusions.

## 1.3 Overview of approach

Our approach involved:

- Reviewing the IPART Draft Decision and Draft EnAM;

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<sup>1</sup> Sydney Desalination Plant Pty Ltd, *Review of prices from 1 July 2017 to June 2022*, DRAFT Report Water, IPART, March 2017

<sup>2</sup> Sydney Desalination Plant Pty Ltd, *Energy Adjustment and Efficiency Carryover Mechanisms*, DRAFT Methodology Paper Water, IPART, March 2017



- Developing high level energy trading strategies that SDP may implement consistent with the Draft Decision and SDP's context;
- Identifying the risks to SDP should it implement these trading strategies;
- Identifying the capabilities SDP would need to develop to implement these trading strategies;
- Estimating a reasonable cost range and timeframe for developing these capabilities. In preparing these cost estimates we undertook brief and no names based discussions with relevant service providers to obtain their perspectives of potential upfront and / or annual costs associated with relevant activities;
- Discussing any questions of clarification or issues with key SDP personnel; and
- Preparing this report.

## 1.4 Key findings

### 1.4.1 Possible trading strategies

Noting that SDP is not an energy trading business we have identified three possible trading strategies ranging from a low risk strategy to a higher risk strategy<sup>3</sup>. These strategies are outlined below, discussed in further detail in Section 4.1 and Table 4.1.

A **low risk strategy** is where SDP only sells futures contracts when the futures price is above the cost of the energy SDP is purchasing from Infigen after allowing for transaction costs (brokerage, margin calls etc.). The sale would be restricted to one quarter ahead and allow for SDP's estimate of any potential energy required in the event of a ramp up requirement. This is the lowest risk strategy that SDP could implement.

A **moderate risk strategy** would be to make trading decisions based on independent spot price forecasts which would include an element of judgement and therefore risk. A comparison of the spot forecasts to the futures price would allow SDP to make a judgement on the value of selling. Selling futures would be undertaken when SDP is confident (based on the independent spot price forecasts) that the futures or forward price is at a premium to the expected spot price after allowing for transaction costs. The volume can be the maximum volume under the Infigen contract allowing for minimum energy consumption during water security mode.

A **higher risk strategy** like the moderate risk strategy but would enable SDP to sell volume up to three quarters ahead, which would be more like a sophisticated trading entity. Three quarters was chosen as a reasonable timeframe for SDP to sell ahead as beyond this SDP may be in full production mode in the event of a requirement to turn on. Clearly SDP could develop a strategy that sells beyond three quarters, but this strategy would also have even higher risks.

### 1.4.2 Key risks

Should SDP trade electricity it would be exposed to many risks, in particular market, liquidity (or cash flow related), credit, legal / regulatory and procedural. Section 4.2 provides further detail on our view of the risks.

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<sup>3</sup> The three strategies identified do not represent the only trading strategies available, rather for simplicity we have identified three that reflect a reasonable spread from a low risk through to a higher risk or more complex strategy. There are clearly other strategies that are variations or hybrids on those already identified.



Whilst we have not quantified these risks, the most material is likely to be the market risk, which arises in the moderate risk and higher risk trading strategies only.

The moderate risk and higher risk strategies introduce market risk if SDP is required to ramp up production. In this event SDP may be exposed to the spot market and may be required to buy back any sold volume from the wholesale market. Clearly the higher risk strategy has higher market risk than the moderate risk strategy given the longer forward sales time horizon (up to 3 quarters ahead) and the increased risk that SDP may be required to ramp up production in this time and the increased electricity volumes SDP could be exposed to if it was called upon to operate.

### 1.4.3 Capabilities required to implement trading strategies

We have developed a simple framework to capture the capabilities required by SDP to implement an energy trading strategy. The framework covers four areas: governance / policy, people, system and process. These are summarised in Figure 4.1. Not all the capabilities identified are required for all the trading strategies, clearly the low risk strategy will require less capabilities than the higher risk strategy. Section 4.4 provides further detail on which capabilities we believe are required for each trading strategy.

### 1.4.4 Cost estimates and timeframes

Section 4.4 details our view of the estimated costs for SDP to implement the required capabilities and how these costs vary for each trading strategy. The upfront costs are described in Table 4.3 and the ongoing annual costs are described in Table 4.4.

Our cost estimates are necessarily presented in a range format given the lack of formally engaging the market and obtaining firm pricing and associated terms and conditions for the relevant services and capabilities to be developed. It would therefore be imprudent to use the lower end of the range presented as a basis for determining the potential costs as it is just as likely that the cost estimates could be at the upper end of the range.

The upfront costs estimates range from \$95,000 - \$140,000 for the low risk strategy to \$135,000 - \$200,000 for the moderate risk and higher risk strategies.

The annual cost estimates range from \$45,000 - \$90,000 per annum for the low risk strategy to \$190,000 - \$327,000 for the moderate risk strategy and \$190,000 - \$337,000 for the higher risk strategy. Whilst the cost estimate ranges for the moderate risk and higher risk strategies are very similar it is more likely that the higher risk strategy would have costs at the higher end of the range than the moderate risk strategy.

Whilst the value potential for the higher risk strategy may be higher so too are the risks and costs to implement. We believe that were SDP to implement such a strategy the costs and risks at times would most likely outweigh the benefits.

Figure 4.2 outlines a high-level sequencing and timeline of the key tasks for SDP to implement the required capability and it identifies that the longest tasks is for SDP to prepare and lodge the required AFSL documentation and to obtain its AFSL, which based on our experience can take up to 6 months in aggregate and is largely outside of the applicant's control and depends on ASIC's availability and timeframes. Without an AFSL SDP will not be able to trade any electricity derivatives<sup>4</sup>. In aggregate, and for any of the

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<sup>4</sup> This is based on our understanding of legal advice provided to SDP in this regard.



strategies identified we estimate that SDP will require up to 9 months to develop the required capability.



## 2 Scope and approach

### 2.1 Scope of work

Our scope of work included:

- Identifying and describing the key risks that SDP would be exposed to if required to undertake energy trading.
- Describing, at a high level the key operational capabilities (covering policy, process, system, people) SDP would be required to implement or contract for to suitably undertake the energy trading activities. We separately identified those activities we believe SDP would undertake versus those that may be provided by a third party including but not limited to Infigen Energy.
- Estimating a reasonable cost range and broad timeframe required to implement the identified capabilities. We separately identified upfront costs and ongoing annual costs.

The scope excluded:

- Quantifying the risks identified, our work only involved a qualitative identification of the key risks;
- Recommending a specific approach for SDP to undertake energy trading – we identified possible options for illustration purposes only;
- Undertaking a legal or regulatory analysis of the implications for SDP should it undertake energy trading. Businesses which ‘deal in a financial product’, for example through trading electricity are usually required to obtain an Australian Financial Services Licence (AFSL) which is administered by the Australian Securities and Investments Commission (ASIC). In preparing this report we have assumed that SDP will be required to obtain an AFSL prior to undertaking any trading activities as failure to do so may result in a breach of ASIC’s requirements; and
- Implementing or developing any of the identified capabilities

### 2.2 Approach

Our approach involved:

- Reviewing the IPART Draft Decision and Draft EnAM;
- Developing high level energy trading strategies that SDP may implement consistent with the Draft Decision and SDP’s context
- Identifying the risks to SDP should it implement these trading strategies
- Identifying the capabilities SDP would need to develop to implement these trading strategies
- Estimating a reasonable cost range and timeframe for developing these capabilities. In preparing these cost estimates we undertook brief and no names<sup>5</sup> based discussions with relevant service providers to obtain their perspectives of potential upfront and / or annual costs associated with relevant activities.

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<sup>5</sup> Our discussions with potential service providers were on a no names basis to protect their commercially sensitive information – namely the prices for their services.



- Discussing any questions of clarification or issues with key SDP personnel; and
- Preparing this report.





### 3 **SDP contractual and policy environment**

Our assessment involved consideration of the environment within which SDP operates. This specifically covered SDP's electricity supply contract and IPART's Draft Decision and Draft EnAM.

Given the commercial sensitivity of the contracts and SDP's policy this section only provides a very high level overview of the elements relevant for our review.

#### 3.1 **Electricity supply contract**

SDP has an electricity supply contract with Infigen Energy.

We understand that the conditions of the Electricity Supply Agreement (ESA) include:

- A contracted minimum annual electricity volume apportioned monthly. If SDP's electricity consumption is below this minimum volume SDP must pay Infigen for any shortfall. This payment is a formula based on the difference between the electricity spot price for each half hour of the month and the contract price.
- The ability for SDP to forward sell electricity in quarterly or annual blocks back to the wholesale market (via Infigen) if SDP believes they will not require all the electricity volume. We appreciate that whilst SDP has a contract with Infigen that covers these services, SDP is not required to contract for these services with Infigen and may be able to obtain other parties to provide similar services. In this report where we mention Infigen providing specific services these could also be provided by other parties, however for simplicity we have referred to them as being provided by Infigen.

When the plant is in water security mode the plant uses less energy, resulting in SDP having an excess quantity of electricity.

#### 3.2 **SDP's electricity trading policy**

In September 2016 the SDP Board approved SDP's LGC and Electricity Trading Policy (the Policy) which outlines SDP's electricity trading strategies.

SDP's current electricity trading strategy as outlined in the Policy states that SDP will not seek to trade electricity nor sell any blocks of surplus wholesale electricity under the ESA.

We have therefore assumed that SDP currently has no capabilities to support electricity trading and that all the required capabilities will need to be developed and / or provided by contract.

We have also assumed that SDP would be seeking to outsource much of the technical or energy trading specific activities (e.g. pool price modelling, market analysis etc.) as this is non-core to SDP and would be more efficiently provided by a third party. However, SDP would need to develop some capabilities such as its own risk management policy and reporting capability. Notwithstanding the outsourcing of technical aspects of electricity trading, the risks involved in trading remain with SDP.



### 3.3 IPART Draft Report and Energy Adjustment Mechanism

IPART's (Draft Decision) and Draft EnAM released in March 2017 are seeking to change 'SDP's incentives to prudently manage its surplus energy over the 2017 determination period'. IPART is seeking to modify the prudence test from one of 'no manifest imprudence' to a general test of 'the prudence of SDP's energy trading policy and activity'.

In applying this new test IPART would need to assess if SDP's approach to managing energy is prudent which would involve reviewing SDP's energy policy and how this policy was executed given information available at the time.

IPART have not prescribed what is a prudent trading activity, however their energy consultants, Marsden Jacobs Associates (MJA), have provided an insight into what a possible prudent trading strategy may look like in SDP's context. This is described in Section 3.3.1 below.

#### 3.3.1 Marsden Jacobs Associates – Possible Prudent Trading Strategy

IPART engaged MJA to undertake a review of SDP's energy costs<sup>6</sup>. Section 4.5 of the MJA report identifies a possible prudent energy trading approach that SDP could implement, noting that MJA were not intending to be prescriptive.

MJA believe a possible approach would involve SDP:

- Reviewing forecast load to ascertain the gap between expected quarterly demand and minimum annual volumes under the Infigen contract
- Reviewing and monitoring forward electricity futures contract prices and contract premiums (the difference between the forward price and the expected spot price)
- Obtaining quotes of futures prices from relevant parties
- Reducing their NSW pool price variability through selling a prudent level (say between 50 and 100 per cent of any surplus energy) for at least the next forward calendar quarter.
- Recording / documenting prevailing market conditions and rationale for the trade at the time of any transaction.

We have used key elements of the MJA approach to develop our view of possible trading strategies for SDP to consider and these are discussed in Section 4.

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<sup>6</sup> *Reviewing Energy Costs For Sydney Desalination Plant (SDP)*, Report prepared for the Independent Pricing and Regulatory Tribunal (IPART), Report – Final (Redacted), Marsden Jacobs Associates, 27 February 2017



## 4 Analysis

### 4.1 Possible energy trading strategies

The approach to trading that SDP takes will influence the risks introduced, the cost of establishing the required capabilities and the ongoing costs.

As previously discussed we used elements of the MJA approach as a basis for developing our views on possible trading approaches. Noting that SDP is not an energy trading business we have identified three possible trading strategies ranging from a low risk strategy to a higher risk strategy. These strategies are outlined below and summarised in Table 4.1.

A **low risk strategy** is where SDP only sells futures contracts when the futures price is above the cost of the energy SDP is purchasing from Infigen after allowing for transaction costs (brokerage, margin calls etc.). The sale would be restricted to one quarter ahead and allow for SDP's estimate of any potential energy required in the event of a ramp up requirement. This strategy is the lowest risk strategy that SDP could implement and would remove the introduction of market risk. Every transaction executed using this strategy would lock in a profit against the Infigen contract price for the benefit of customers and SDP.

A **moderate risk strategy** would be to make trading decisions based on independent spot price forecasts which therefore includes a degree of judgement and risk. A comparison of the spot forecasts to the futures price would allow SDP to make a judgement on the value of selling. Selling futures would be undertaken when SDP is confident (based on the independent spot price forecasts) that the futures or forward price is at a premium to the expected spot price after allowing for transaction costs. This strategy would envisage selling futures even if the price is below the cost of the Infigen contracts. The volume can be the maximum volume under the Infigen contract allowing for minimum energy consumption during water security mode. This scenario does introduce market risk if SDP is required to ramp up production. In this event SDP may be exposed to the spot market and may be required to buy back any sold volume from the wholesale market.

A **higher risk strategy** like the moderate risk strategy but would enable SDP to sell volume up to three quarters ahead, which would be more like a sophisticated trading entity. This creates a much greater market and liquidity risk as the volumes transacted are larger and there is more uncertainty around SDP's future energy usage. Three quarters was chosen as a reasonable timeframe for SDP to sell ahead as beyond this SDP may be in full production mode in the event of a requirement to turn on. Clearly SDP could develop a strategy that sells beyond three quarters, but this strategy would also have higher risks.



Table 4.1: Summary of trading strategies

Criteria	Trading strategy		
	Low risk	Moderate risk	Higher risk
<b>Volume restrictions</b>	<ul style="list-style-type: none"> <li>Only sell volume in excess of allowance for estimated usage in the event of any potential ramp up.</li> </ul>	<ul style="list-style-type: none"> <li>Only sell volume in excess of minimum usage volume in water security mode.</li> </ul>	<ul style="list-style-type: none"> <li>Only sell volume in excess of minimum usage volume in water security mode.</li> </ul>
<b>Trading period</b>	<ul style="list-style-type: none"> <li>One quarter ahead</li> </ul>	<ul style="list-style-type: none"> <li>One quarter ahead</li> </ul>	<ul style="list-style-type: none"> <li>Up to three quarters ahead</li> </ul>
<b>Trading direction</b>	<ul style="list-style-type: none"> <li>Selling only</li> </ul>	<ul style="list-style-type: none"> <li>Selling and buy back if required due to ramp up production.</li> </ul>	<ul style="list-style-type: none"> <li>Selling and buy back if required due to ramp up</li> </ul>
<b>Decision period</b>	<ul style="list-style-type: none"> <li>One month before a quarter commences</li> </ul>	<ul style="list-style-type: none"> <li>One month before a quarter commences except in the event of a buy back which would be as required.</li> </ul>	<ul style="list-style-type: none"> <li>One month before a quarter commences except in the event of a buy back which would be as required.</li> </ul>
<b>Decision criteria</b>	<ul style="list-style-type: none"> <li>Only sell if the futures price after allowing for transaction costs is in excess of the Infigen contract price</li> </ul>	<ul style="list-style-type: none"> <li>Only sell if futures price after allowing for transaction costs is in excess of the forecast spot price.</li> <li>Buy back may be required in the event of a requirement to ramp up production.</li> </ul>	<ul style="list-style-type: none"> <li>Only sell if futures price after allowing for transaction costs is in excess of the forecast spot price.</li> <li>Buy back may be required in the event of a requirement to ramp up production.</li> </ul>

The three strategies identified do not represent the only trading strategies available, rather for simplicity we have identified three that reflect a reasonable spread from a low risk through to a higher risk or more complex strategy and analysed the risks, capabilities required and estimated costs and timeframes. There are clearly other strategies that are variations or hybrids on those already identified.

Should any alternative strategy other than those identified above be implemented then the appropriate risks, capabilities, costs and timeframes would need to be analysed.



## 4.2 Key risks relating to energy trading

This section outlines the key risks SDP may be exposed to if they implement the energy trading strategies outlined in Section 4. We firstly describe each category of risk, the key risk within each category and how these risks vary by strategy. These are also summarised in Table 4.2.

### Market Risk

Market Risk is the risk of a loss due to movements in market variables in particular spot price and volume (SDP usage). The approach taken by SDP to trading will decide if market risk is introduced.

The low risk trading strategy would not introduce market risk unlike the two other strategies. The moderate risk and higher risk strategies introduce market risk if SDP is required to ramp up production. In this event SDP may be exposed to the spot market and may be required to buy back any sold volume from the wholesale market. Clearly the higher risk strategy has higher market risk than the moderate risk strategy given the longer forward sales time horizon (up to 3 quarters ahead) and the increased risk that SDP may be required to ramp up production in this time.

### Liquidity Risk

Liquidity risk is unanticipated cash flows due to movements in market variables including price and volume. These are usually in the form of Mark-to-Market (MtM) changes in the value of hedge contracts. Given SDP will be using the SFE via Infigen, the negative MTM would be required to be paid in the form of cash margining and is a new risk introduced to SDP by trading.

Trading on the SFE can be cash flow intensive with initial margins for 1MW varying ranging between \$15 to \$30K depending on the quarter and volatility of the contract. A 10MW contract for Q1 would incur a \$22K cash variation margin for a \$1 unfavourable move e.g.  $10\text{MW} * 2208\text{Hrs} * \$1 = \sim \$22,000$ .

Liquidity risk will increase as the level of trading activity increases from the low risk strategy to the higher risk strategy.

### Procedural Risk

Procedural risk is the risk of loss resulting from failed or inadequate controls over internal processes, people and systems.

There are two key procedural types of risk:

- Willful misconduct or activity related: There is a risk that an employee of SDP, or Infigen as SDP's agent, could undertake unauthorised trading (or rogue trading) meaning they did transact, but not in accordance with SDP's Energy Trading Policy. These transactions could incur financial losses to SDP through unwanted spot exposure or MtM implications.
- Unintentional errors: This risk relates primarily to SDP incorrectly making payments to Infigen and / or other counterparties (e.g. SFE) for incorrect settlements that were not appropriately checked.

These risks also increase as the level of trading activity increases from the low risk strategy to the higher risk strategy.



**Credit Risk**

Credit risk is the loss resulting from default by a counterparty. Credit risk includes the loss due to a non-payment and the potential loss for having to re-enter the market to close out the position.

As any trading is envisaged to be executed via Infigen (and the SFE) using an SDP specific futures account credit risk is not introduced.

**Legal & Regulatory Risks**

Legal risks are the risk of loss due to a counterparty’s performance being unenforceable and/or executing a contract with unauthorised terms and conditions. Given that trading activity will most likely be via Infigen using futures which are standard contracts there should be no legal risk. We appreciate that there may be some legal risk associated with the overarching contract between Infigen and SDP for the provision of trading services, however we believe this should be minimal. It is important to note that should any trading occur using contracts with unauthorised terms and conditions this would be captured in procedural risk described above and not legal risk. It is for this reason we assume that there is no legal risk.

Regulatory risk is the risk of a loss or penalty, including a loss of reputation, due to a failure to comply with relevant regulations and expected standards of conduct. This risk is introduced especially with the requirement for an AFSL which has ongoing requirements to continue to comply with its regulations.

Regulatory risk would increase as the level of trading activity increases from the low risk strategy to the higher risk strategy.

**Summary of key risks**

Table 4.2: Risk summary table

Risk category	View of risk by trading strategy		
	Low risk	Moderate risk	Higher risk
<b>Market</b>	<ul style="list-style-type: none"> <li>• Nil</li> </ul>	<ul style="list-style-type: none"> <li>• Arises from potential spot exposure if SDP is required to ramp up production.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased risk over moderate risk strategy due to longer forward sales time horizon and increased risk of SDP needing to ramp up production.</li> </ul>
<b>Liquidity</b>	<ul style="list-style-type: none"> <li>• Based on margin call requirements due to mark to market of futures sold.</li> <li>• Increases with volume of electricity sold.</li> </ul>	<ul style="list-style-type: none"> <li>• Increases with volume of electricity sold.</li> </ul>	<ul style="list-style-type: none"> <li>• Increases with volume of electricity sold.</li> </ul>
<b>Credit</b>	<ul style="list-style-type: none"> <li>• Nil given use of</li> </ul>	<ul style="list-style-type: none"> <li>• Nil given use of</li> </ul>	<ul style="list-style-type: none"> <li>• Nil given use of</li> </ul>

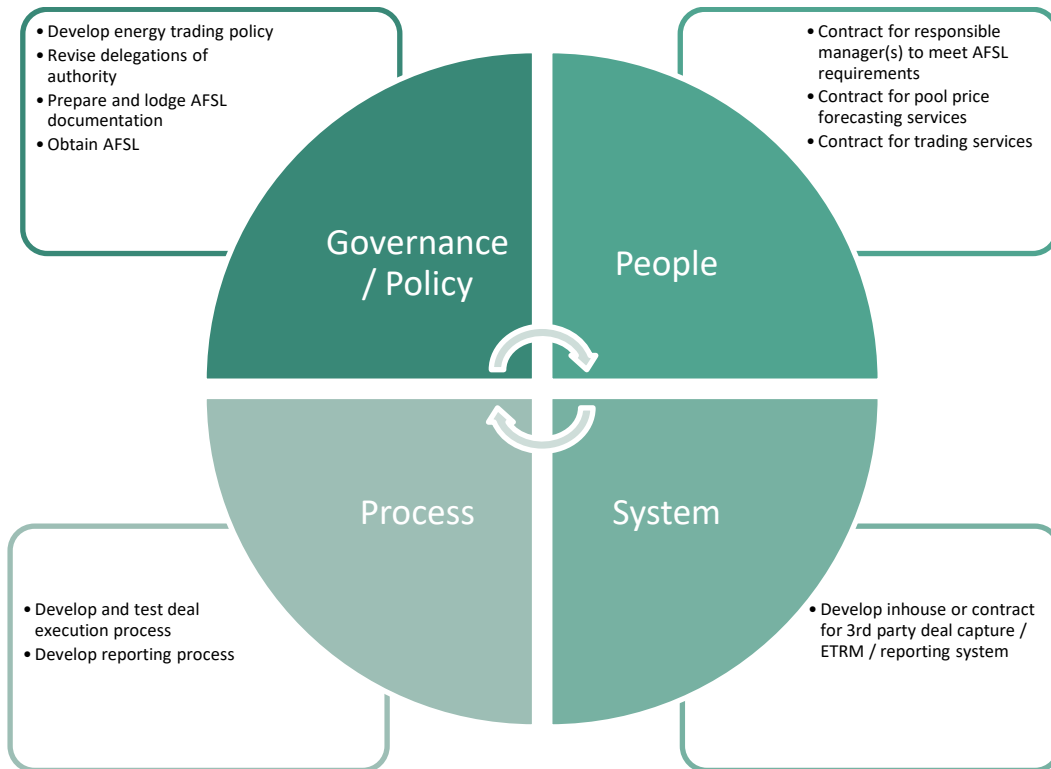


Risk category	View of risk by trading strategy		
	Low risk	Moderate risk	Higher risk
	futures on SDP's own account.	futures on SDP's own account.	futures on SDP's own account.
<b>Legal</b>	<ul style="list-style-type: none"> <li>• Nil in trading activity given use of futures.</li> <li>• Noting there is technically legal risk in preparing the contract for trading services with Infigen.</li> </ul>	<ul style="list-style-type: none"> <li>• Nil in trading activity given use of futures.</li> <li>• Noting there is technically legal risk in preparing the contract for trading services with Infigen.</li> </ul>	<ul style="list-style-type: none"> <li>• Nil in trading activity given use of futures.</li> <li>• Noting there is technically legal risk in preparing the contract for trading services with Infigen.</li> </ul>
<b>Regulatory</b>	<ul style="list-style-type: none"> <li>• Related to breaching AFSL requirements.</li> <li>• Increases with level of trading activity.</li> </ul>	<ul style="list-style-type: none"> <li>• Increases with level of trading activity.</li> </ul>	<ul style="list-style-type: none"> <li>• Increases with level of trading activity.</li> </ul>
<b>Procedural</b>	<ul style="list-style-type: none"> <li>• Related to either willful misconduct (rogue trading) or other errors (incorrect settlements).</li> <li>• Increases with level of trading activity.</li> </ul>	<ul style="list-style-type: none"> <li>• Increases with level of trading activity.</li> </ul>	<ul style="list-style-type: none"> <li>• Increases with level of trading activity.</li> </ul>

### 4.3 Capabilities required to implement an energy trading strategy

We have developed a simple framework to capture the capabilities required by SDP to implement an energy trading strategy. The framework covers four areas: governance / policy, people, system and process. These are summarised in Figure 4.1. Not all the capabilities identified are required for all the trading strategies, clearly the low risk strategy will require less capabilities than the higher risk strategy. Section 4.4 provides further detail on which capabilities we believe are required for each trading strategy.



**Figure 4.1: Summary of capabilities required to implement an energy trading strategy**

#### 4.4 Costs estimates and timeframes to implement the required capabilities

We have estimated the costs for SDP to implement the required capabilities and how these costs vary for each trading strategy. The upfront costs are described in Table 4.3 and the ongoing annual costs are described in Table 4.4.

Our cost estimates are necessarily presented in a range format given the lack of formally engaging the market and obtaining firm pricing and associated terms and conditions for the relevant services and capabilities to be developed. It would therefore be imprudent to use the lower end of the range presented as a basis for determining the potential costs as it is just as likely that the cost estimates could be at the upper end of the range. The upfront costs estimates range from \$95,000 - \$140,000 for the low risk strategy to \$135,000 - \$200,000 for the moderate risk and higher risk strategies.

The annual cost estimates range from \$45,000 - \$90,000 per annum for the low risk strategy to \$190,000 - \$327,000 for the moderate risk strategy and \$190,000 - \$337,000 for the higher risk strategy. Whilst the cost estimate ranges for the moderate risk and higher risk strategies are very similar it is more likely that the higher risk strategy would have costs at the higher end of the range than the moderate risk strategy.

Whilst the value potential for the higher risk strategy may be higher so too are the risks and costs to implement. We believe that were SDP to implement such a strategy the costs and risks at times would most likely outweigh the benefits.



Figure 4.2 outlines a high-level sequencing and timeline of the key tasks for SDP to implement the required capability and it identifies that the longest tasks is for SDP to prepare the AFSL documentation and to ultimately obtain its AFSL, which based on our experience can take up to 6 months and is largely outside of the applicant's control and depends on ASIC's availability and timeframes. Without an AFSL SDP will not be able to trade any electricity derivatives. In aggregate, and for any of the strategies identified we estimate that SDP will require up to 9 months to develop the required capability.

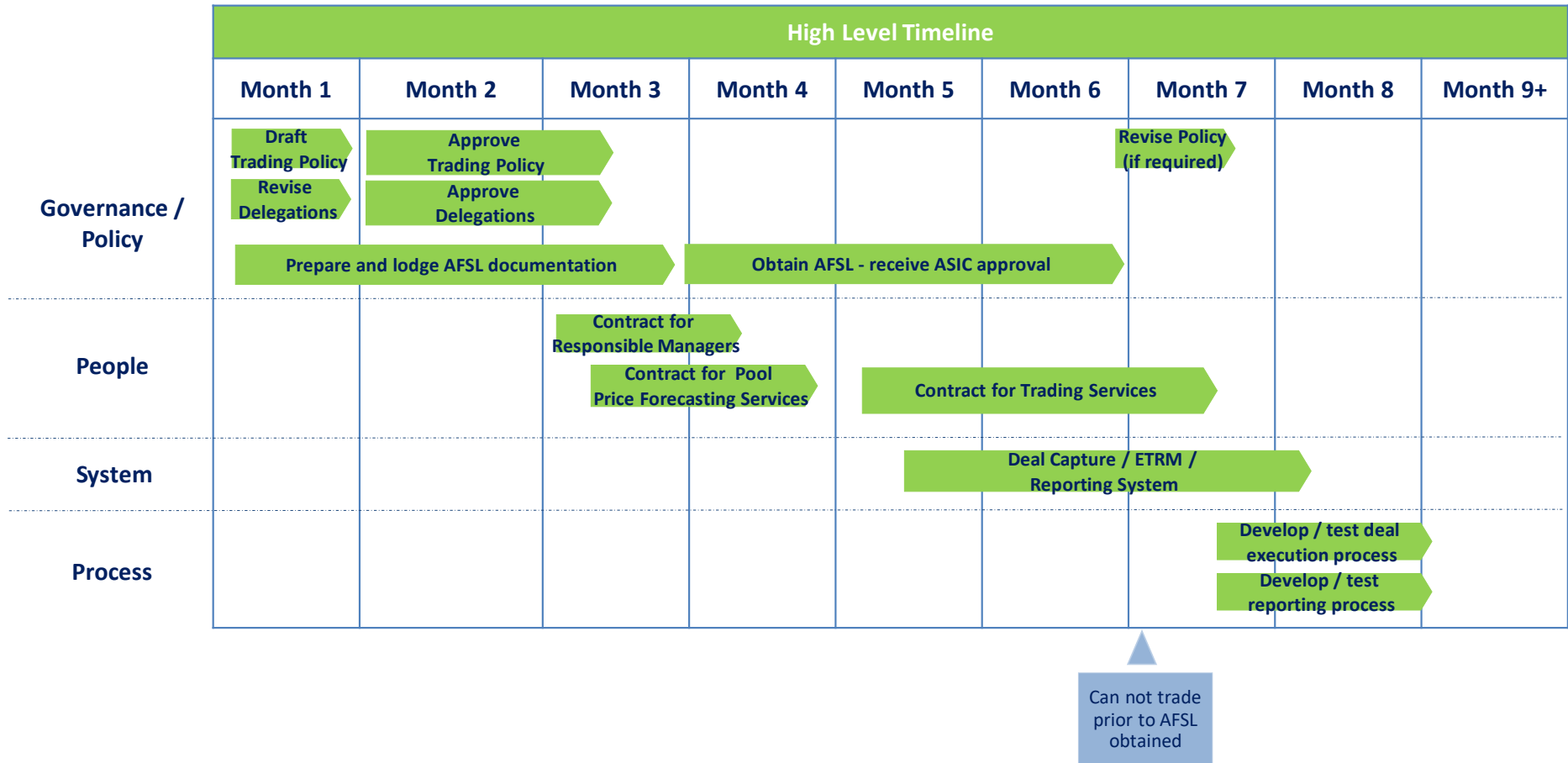








Figure 4.2: High level timeline to develop energy trading capabilities









Capability / Task	Cost Range by Trading Strategy (\$'000 p.a.)			Comment / timeframe
	Low risk	Moderate risk	Higher risk	
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			<b>Total</b>	
<b>Total costs</b>	<b>\$45 - \$90</b>	<b>\$190 - \$327</b>	<b>\$190 - \$337</b>	This does not allow for internal costs or any costs from potential unexpected changes in circumstances.



## A. Overview of Seed Advisory

Formed in 2008, Seed Advisory is an independent commercial advisory firm specialising in the energy sector covering electricity, gas, renewable technologies and carbon and spans the entire value chain. Key services include the provision of commercial, policy, strategic and risk management advice to energy companies, energy users, infrastructure businesses, regulators, governments, financial institutions, entrepreneurs and investors.

Seed Advisory has worked with several water utilities including the Intelligent Water Network (IWN), Melbourne Water, GWM Water, South East Water, City West Water and Wannon Water. Our work with water utilities includes the recently completed feasibility study on industry scale renewable energy, preparing a business case to develop a renewable energy strategy and business case for the Board of Directors of one water utility. Our work has also included identifying options to reduce energy costs and developing a comprehensive energy strategy. For another water utility we spent over 9 months with their energy team and management developing an energy strategy to reduce costs.

We have also advised: the Victorian Government; ARENA; the Clean Energy Finance Corporation; Low Carbon Australia; the Carbon Markets Institute (with ClimateWorks Australia); the Australian Energy Markets Commission; the Australian Energy Market Operator; the Independent Market Operator, Western Australia; the Western Australian government; the Commonwealth Government, a range of market participants in Australian electricity and gas markets and their peak organisations, including the National Generators Forum, the Private Generators Group and the Energy Retailers Association of Australia.

Leading this project was Peter Eben, a Director and co-founder of Seed. Peter has over 18 years practical and advisory experience across the energy value chain covering consumers, retailers, networks, wholesale participants, regulators, governments and investors.

His expertise covers the gas, electricity, carbon and renewable energy markets. Peter has worked in senior management position at Energy Australia, AGL, Pulse Energy, United Energy and IKON Energy as well as at KPMG.

Peter is also a former member of ARENA's R&D advisory panel and a qualified actuary with strong analytical and risk management skills.

David Priest is an Associate of Seed Advisory and an executive consultant to the energy industry. David worked with Peter on this project. David has 14 years' experience across the energy industry including GM Trading at Energy Australia where he had overall responsibility for the wholesale trading division for electricity, gas, coal, carbon and renewables. He has been a member of the AFMA Electricity committee, Energy Risk committees and is an AFSL responsible manager.

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