

SYDNEY DESALINATION PLANT RP3 PRICING SUBMISSION ENGAGEMENT OUTCOMES REPORT



REPORT

Document status					
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1 EXECUTIVE SUMMARY

On behalf of Sydney Desalination Plant, RPS would like to thank all participants who attended the workshops, provided feedback and entered into robust conversations.

In preparation for their 2023-27 Regulatory Pricing Submission to the Independent Pricing and Regulatory Tribunal (IPART), Sydney Desalination Plant (SDP) engaged RPS to assist with an independently run consultation program involving Sydney Water.

Sydney Water is a key stakeholder, with SDP providing water supply services to Sydney Water in line with its policy, regulatory and commercial obligations. The costs of service and production are recovered through regulated prices levied on Sydney Water and passed through to end-use customers. Responding to Sydney Water's needs is a crucial driver for SDP and strengthening their relationship will enable the parties to better deliver in the interests of water customers.

With RPS' assistance, SDP held a series of three workshops with Sydney Water between June and August 2022 to present key proposed changes, evidence and rationale. These changes were developed in response to the changes within SDP's operations under its new Network Operator's Licence, driven by the final Greater Sydney Water Strategy.

Workshops were planned to occur before SDP's submission to IPART to ensure that there is enough time to consider Sydney Water's feedback, answer any questions and understand their viewpoint and advice. The timeframes were challenging due to the uncertainty regarding the details of SDP's revised Network Operator's Licence. However, SDP undertook to engage with Sydney Water as early as possible.

Workshop 1 was a site tour of the Sydney Desalination Plant at Kurnell, and an introductory workshop and presentation. The aim was for all participants to better understand the new operating rules, associated cost structures, and the background to the plant's operations and history. The conversation during workshop 1 generally covered the following:

- 1. **Energy use,** pricing, and potential for efficiency and renewables (noting this was not a formal subject matter planned for the day)
- Cost structures and what can be clearly estimated up-front and included in IPART's Determination on pricing vs services that are uncertain in nature and best managed through negotiated agreements
- 3. How the new **operating rules** would be put into practice including minimum production requirements, terminology shift of the plant being 'always on', and the shift away from shut down/start up related costs

Workshop 2 involved a complex and in-depth conversation around energy needs and costs, capital expenditure strategy to achieve optimal energy efficiency, pricing and the energy adjustment mechanism. The conversation during workshop 2 generally covered the following:

- 1. **Strategies to reduce energy** requirements long-term, with Sydney Water interested in SDP achieving greater efficiency targets, and potentially using on-site renewable energy
- 2. Cost implications due to the shift to 'always on' operations, lower energy efficiencies due to rising average age of reverse osmosis membranes, rising costs of chemical required for treatment processes, each were acknowledged by Sydney Water as being drivers to increased cost but stressed that all costs that are within the scope of normal operations be included in regulated prices rather than subject to negotiated agreements.
- 3. **Energy requirements** and the proposal by SDP to reduce their risk exposure by altering the cost sharing ratio of the energy adjustment mechanism was acknowledged by Sydney Water but they advised they do not have a view either way regarding this, however their priority is always reducing customer and reputational risk

Workshop 3, the final workshop, was centred around operations and maintenance requirements, insurance needs, and the service level incentive scheme. The conversation during workshop 3 generally covered the following:

- 1. **Operations and maintenance** and key drivers increasing the costs for O&M for SDP, Sydney Water acknowledged much of this content
- 2. **Insurance and SDP proposal to lower insurance costs** based on lower financial risks under the service level incentive scheme.
- Incentive mechanisms were discussed. Sydney Water acknowledged that the current abatement framework does not contain positive incentives and that introducing this would be an improvement opportunity that should be explored.

This report is a record of the topics discussed, the questions asked and the general themes of discussion that emerged during the engagement workshops. This report is not a record or indications of Sydney Water's final positions on any topics discussed but provides an overview of how Sydney Water responded to topics at the time of discussion.

2 INTRODUCTION

2.1 Project overview/context

The Sydney Desalination Plant (SDP) provides Greater Sydney's only source of rainfall independent drinking water and plays a key role in supporting Sydney Water with system resilience. SDP provides water security to Greater Sydney during periods of drought by producing sufficient high quality drinking water – as well as long term, on-demand water supply services with capacity to meet increasing demand into the future.

SDP is required to undertake a regulatory price review (RP3) in 2022. As a part of their submission, SDP has engaged RPS to plan and facilitate a series of workshops with Sydney Water to consult their representatives on aspects of the pricing submission. The stakeholders consulted in these workshops were from Sydney Water's Commercial, Business Development, Customer Strategy, Operations, and Regulatory teams.

The purpose of the consultation was to inform and involve Sydney Water in the process and thinking behind proposed changes to SDP's business as a result of the operational model changes from the Greater Sydney Water Strategy. Workshops ran between June and August 2022 and feedback from the sessions will be considered as SDP finalises their pricing due to IPART in September 2022.

Upon opening in 2011, the Sydney Desalination Plant functioned primarily as a drought-response asset that operated during periods of drought for Sydney Water. Under its previous Operating Rules, SDP would switch on when dam levels fell below 60% and then switch off again once dam levels exceeded 70%. There was also provision for emergency response operation, but this has only become a prominent feature since the last restart of the plant in 2019.

In response to the Greater Sydney Water Strategy (GSWS), SDP's new Network Operator's Licence has redefined SDP's function and service delivery expectations within the water supply system. No longer centring operations around production in response to drought, the role of the SDP under its new Network Operator's Licence has evolved from operating as an '*drought-response*' water security asset to operating as an '*always-on*' water production asset within the water supply network. Consequently, this change has created the need for reorientating and restructuring SDP operating, pricing, and regulatory frameworks in order to align with its new Network Operator's Licence and the GSWS. This shift to an 'always-on' water supply asset, and the implications of the GSWS, have been the focus of the RP3 engagement process and is to be reflected in the SDP pricing submission.

Over the course of three stakeholder engagement workshops, SDP presented and discussed the following topics with Sydney Water.

Session	Key Topics
Workshop 1	Scope of regulation and negotiated servicesOperating modes and price structures
Workshop 2	 Energy costs and energy efficiency Capex strategy and energy efficiency Energy Adjustment Mechanism
Workshop 3	Operations and Maintenance CostsService Level Incentive Scheme

The topics discussed during the series of engagement workshops were selected by the operations, regulatory and executive team at SDP in alignment with the determination process. The framing and development of these subject areas were further refined in consultancy with RPS, Frontier Economics as well as through ongoing collaboration and feedback sought from Sydney Water following workshops one and two.

3 METHODOLOGY

SDPs stakeholder engagement process was divided into three workshops that each presented and discussed a range of interrelated subject areas. These workshops aimed to develop a shared understanding between SDP and Sydney Water on what the thinking behind proposed changes to SDP operations and the resulting financial implications. The topics discussed within each workshop and the feedback received from Sydney Water will assist SDP in forming its final submission.

Workshop 1 involved a tour of the Sydney Desalination Plant and an introductory workshop to provide stakeholders with context around the function and operation of SDP with a focus on defining the new regulatory landscape under SDP's new Network Operator's Licence, the Greater Sydney Water Strategy and the evolving role of SDP.

Workshop 1 offered opportunity for participants to delve into the baseline of how SDP operates and how this would change, and question some of the assumptions and decision-making processes. Workshop 1 aimed to foster a shared understanding for all participants moving forward into workshops 2 and 3.

Workshops 2 and 3 provided opportunity for SDP to present Sydney Water with summary-level technical information around operations, asset maintenance and efficiencies, fixed and variable expenses, cost recovery, energy, and the distribution and management of risk.

These workshops also offered a platform for SDP to present and gain feedback on the proposal and how it deviated from RP2 determinations. SDP aimed to seek initial views and sentiment from Sydney Water so that the two parties could better understand each other's drivers, challenges, and any opportunities.

3.1 Stakeholders

Attendees were chosen for their relevant technical knowledge of the topics discussed, allowing for an engaged and productive dialogue. Customer subject matter experts were invited to include feedback through the customer lens however were not able to attend all sessions. Unfortunately, not all attendees could attend all workshops due to illness and isolation requirements. The workshops included representatives from:







Attendees:	Role	Company:	Workshops attended
Ifty Omar	General Manager, Regulation	SDP	1,2,3
Phil Narezzi	CEO	SDP	1,2,3
Matt Blaikie	General Manager, Operations	SDP	1,2,3
Michael English	Manager, Competition and Regulation	Sydney Water	1,2,3
Karen Chia	Water Grid Manager	Sydney Water	1,2,3
Lilian Fung	Senior Commercial Manager	Sydney Water	1,2,3
Melanie Werner	Head of Customer Programs	Sydney Water	1
Selma Caldarevic	Operations Team	Sydney Water	1
Ben Blayney	Head of Water Supply and Production	Sydney Water	1
Francis Del Villar	Commercial Manager	Sydney Water	1,2,3
Craig Evans	Senior Finance Business Partner	Sydney Water	3
Anthony Rush	Director	IPART	1
Peter Eben	Director and Energy Market Specialist	Seed Advisory	2
Rosemary Jones	Economist	Frontier Economics	1,2,3
Anne-Marie Mitchell	Consultation support	RPS	1,2,3
Joe Ingui	Consultation support	RPS	1,2,3

3.2 Workshop 1

3.2.1 Workshop 1 objectives and structure

On 23 June 2022, the first deep dive workshop was delivered at the plant itself in Kurnell. It was designed with the intention to:

- Engage stakeholders and provide an overview of the current landscape in which SDP operates.
- Introduce the Greater Sydney Water Strategy (GSWS), discuss GSWS's impact on SDP, the landscape it operates within, and deep dive into how this should be reflected in RP3.
- Generate shared understanding of the changes, their impacts, and provide an opportunity for attendees to raise topics of interest to be discussed in workshop two and three.

The workshop was delivered in three parts:

Part 1: Tour and history of the plant, brief summation of current ways of working and operating modes.

Part 2: Review current operations, regulatory framework, determination process, and cost structures. Introduction and discussion of impact of GSWS on SDP. **Part 3:** Key issues for RP3. Deep Dive on scope of regulated services, operating modes, and price structures

3.2.2 Workshop 1 content overview

Part one - Introduction and Sydney Desalination Plant Tour

The engagement workshop began with an introduction and history of the Desalination plant, presented by General Manager of Regulation, Iftekhar Omar. This established an understanding of the purpose of the SDP, a timeline of its history and a summation of its services, cost structures and regulatory framework to present day.

This introduction was followed by an in-depth site tour and technical crash course on the desalination plant, how it operates and its current ways of working, facilitated by General Manager of Operations, Matt Blaikie. The attendees toured the plant and were able to ask questions along the way to better understand the operations and history of the plant.

Part two – Working session #1 - Operating models (old vs new)

Topics covered during this working session included

- 1. Moving forward under the GSWS
 - a. Introduced the GSWS
 - b. Illustrated where stakeholders sit in the new operating framework
- 2. Snapshot of history, purpose, regulatory framework vs GSWS
 - a. Overview of SDP's old model vs new model under GSWS
- 3. Implications for SDP
 - a. Impacts of moving to an always on operating mode from on demand
 - b. Impacts on cost and price structures
 - c. Development of new incentive and risk management mechanisms

The group were presented with and discussed the GSWS and were offered key insights from SDP into the major changes in operations and regulatory requirements that it proposed. The critical implication of the GSWS for SDP highlighted was the change from a '*drought-response*' mode of operations that has seen the plant remain in shutdown unless requested during drought, to operating in an '*always-on*' state of operations to meet ongoing Sydney Water production requests. By operating as a production asset that supports long-term system resilience rather than a drought response asset that principally delivers water during drought, the operational requirements, cost structures and regulatory frameworks are to become increasingly complex.

SDP made efforts to foster engagement and facilitate discourse with the workshop group by asking "What are your first thoughts about the implications of the GSWS changes?" and, "How might you see this impacting SDP and Sydney Water?" This approach encouraged inquiry into potential friction points and the novel complexities in the GSWS. These efforts were successful and saw an open discussion of the intricacies of the new rules and their impacts and highlighted the issues SDP and Sydney Water will need to understand and navigate into RP3.

Part three – Working session #2 – Priority issues and deep dive

Topics covered during the final session of workshop 1 included:

- 4. Categorisation of priority issues
- 5. Scope of Regulated Services
- 6. Baseline Production and pricing structure
- 7. Next steps
 - a. Priority issues for Sydney Water raised

This session established an in-depth overview of the content and most important elements of RP3 that were to frame the deep dive discussions set to occur in each workshop, and where each proposed topic lay under each of the following:

- 1. The services expected by customers moving forward under the drafted GSWS
- 2. Forecasting the costs of providing these expected services
- 3. Calculating the prices required to cover these forecasted costs
- 4. Defining the incentive and risk management framework to support customers long-term interests

The group discussed customer service expectations and the services required under the licence. This topic was broken down into:

- Scope of regulated services
- Baseline production and pricing structure

The deep dive into each of these subjects was co-presented by Ifty Omar, for the scope of regulated services, and by Matt Blaikie for the baseline production and pricing structure.

The scope of regulated services discussion focused on the operational modes subject to price regulation in RP3 determination and the negotiated charges that fall under 'deferred regulation.' Attendees engaged in collaborative discussion around the potential for a built-in negotiation mechanism that would allow SDP and Sydney Water to determine pricing for unforeseen services within period. This mechanism would provide some flexibility price structuring in case of unforeseen circumstances.

Following this, Matt Blaikie presented and facilitated a conversation around baseline production requirements to maintain response capacity under new regulatory framework. This section of the workshop saw discussion of additional process water and the fixed cost of availability that SDP has been incurring in "low-flow" availability that has not been accounted for yet in any previous regulatory determinations. Additional costs in reverse osmosis membrane operations were also discussed as was pricing structure, variable and fixed plant costs and fixed pipeline costs.

The workshop concluded with attendees having opportunity to raise topics or focus areas they would like to discuss in workshops two and three.

Workshop 1 topics	Workshop 1 key points		
Priority issues for discussion	Overview of the review process - goes through four steps to find price determination:		
	 Consider the services expected by our customers and stakeholders Scope of regulated services, Operating modes and price structures 		
	 Forecast the costs of providing these services Capex, Energy, Opex and O&M issues 		
	Consider the incentive and risk management framework to support customers long-term interests		
	 Incentive mechanisms, Insurance and risk management framework, Financeability 		
Presentation on Scope of Regulated Services	Current regulatory declared services for SDP, water supply services and water security services		
	Breakdown of costs, Opex, Capex and cost to customers was the focus		
Baseline production and pricing	Highlights from the draft GSWS		
structure	 Infographic with SDP's new operating framework 		
	 Flagging key implications of GSWS on SDP 		
	 Historical purpose of SDP vs future purpose infographic 		
	Old 'on-demand' operational rules vs new 'always-on' rules		
Priority issues for Sydney Water	• Are there any additional issues that you feel would add value as discussion items in this process?		
	Which issues are highest priority in your view?		
Proposed approach to meeting future customer service	Negotiation framework between SDP and SW in lieu of IPART determination in case of unforeseen service needs		
requirements	Difficulty prospectively estimating shutdown and restart complications on the plant		
Unaccounted costs of plant	Process water in low-flow unaccounted for in determinations		
operations and production	 Variable plants costs, fixed plant costs and fixed pipeline costs in pricing structure 		

3.2.3 Workshop 2 objectives and structure

On 22 July 2022, the second deep dive workshop was delivered at Sydney Desalination Plant offices at Australia Square in Sydney CBD. It was designed with the intention to:

- Review discussion and insights from workshop 1
- Facilitate shared understanding of energy volume requirements forecasted under GSWS
- Introduce and discuss Capex strategy and energy efficiency
- Examine energy prices, discuss consumed energy price allowances
- Discuss managing surplus energy price risks with reference to the practicalities, benefits, and disadvantages of forward trading, and propose new Energy Adjustment Mechanism.

The workshop was delivered in three parts:

Part 1: Summarise workshop 1 outcomes, presentation, and discussion of energy volume requirements and, Capex strategy and energy efficiency.

Part 2: Presentation and deep dive on consumed energy price allowance and introduce managing surplus energy price risk before taking short break **Part 3:** Deep dive 'on demand' management options, discussion of forward trading energy and present what to expect in final workshop.

3.2.4 Workshop 2 content overview

Workshop attendees were given a recap of SDP's new regulatory framework and SDP's proposed negotiation agreement regarding a single regulated operational mode. The topics of discussion following this recap were as follows:

- 1. Energy requirements
- 2. Energy efficiency strategy
- 3. Energy prices
- 4. Energy adjustment Mechanism

The first topic of the session discussed energy requirements. SDP articulated the amount of energy the plant needs to operate and the contributing factors that drive use. The conversation highlighted SDP as an energy intensive business as well as the increased energy requirements of RP3 due to the change in availability requirements and the diminishing efficiency of SDPs ageing reverse osmosis membranes. SDP finished this discussion with a proposed energy consumption rate per ML of water produced for RP3 that indicated a stepped, year-on-year increase in energy requirements forecast based on the projected age of SDP's reverse osmosis membranes.

Discussion two of the session built upon earlier discussions, focusing on SDP's capex strategy to optimise energy volume requirements; proposing a gradual membrane replacement strategy to target and maintain optimal average membrane age. SDP then presented information on their obligation to procure renewable energy and implement a Greenhouse Gas Reduction Plan (GGRP). GGRP contracts were highlighted as key to providing long-term price stability for the supply of electricity and Large-scale Generation Certificates (LGCs).

The next topic for discussion saw a highly engaging discussion of SDPs proposed Energy Adjustment Mechanism (EAM). Highlighted as a key consideration in the proposal was that under the current EAM, SDP bears a level of risk that is disproportionate to the level of control it has over gains and losses, and that it is

even more difficult to predict surplus energy under the new operating rules. SDP proposed an EAM that applies to all surplus energy with a core band of 2.5% and a sharing ratio outside of the core band of 95:5.

The final presentation was delivered by Peter Eben from Seed Advisory in consultation with SDP and discussed trading electricity and LGCs, the notion of forward premiums and the practicalities of forward trading for SDP.

Workshop 2 topics	Workshop 2 key points		
Recap Workshop 1	 SDP's new regulatory framework Recap of negotiated agreements SDP will propose single regulated Operational Mode for production with respect to defined level of service with negotiated framework for any 		
	shutdown periods		
Energy requirements	 Capex strategy to deliver energy efficiency targets, Gradual membrane replacement to maintain average age of 4.5 years across all membranes 		
	 Capex-Opex trade off, cost of new membranes vs maintaining older ones 		
Energy prices	 Obligation to procure renewable energy and implement GGRP GGRP contracts set stable long-term prices for SDP, provide long-term hedge against volatility in price of electricity and LGCs 		
Energy Adjustment Mechanism	 Minimum-take under GGRP contracts SDPs EAM proposal, considerations, forecasted gains and losses Trading electricity and LGCs Forward premium, practicalities of forward trading 		

3.3 Workshop 3

3.3.1 Workshop 3 objectives and structure

On 2 August 2022, the final deep dive workshop was delivered in Parramatta. It was designed with the intention to:

- Review key insights and outcomes that required revisiting from workshop 2 as flagged by Sydney Water
- Identify, articulate, and explain SDP's Operating and Maintenance costs, and propose increases
- Discuss and propose a new Service Level Incentive Scheme for RP3 that builds on the existing abatement scheme framework

The workshop was delivered in three parts:

Part 1: Review and discussion of SDP proposals on energy from workshop 2. Highlight fixed and variable energy increases, efficiency, prices and EAM.

Part 2: Introduce and deep dive on the concrete details changing dynamics of SDP operating and maintenance costs moving forward in RP3 **Part 3:** Proposal and collaborative discussion on SDP's drafted Service Level Incentive Scheme for RP3.

3.3.2 Workshop 3 content overview

Workshop attendees were given a recap of the following proposals on energy for RP3 by SDP:

- Fixed and variable energy increases
- Energy efficiency, staggered membrane replacement
- Energy prices
- Adjustments to EAM

Following this recap of workshop 2, topics for discussion in the third and final engagement workshop were:

- 1. Operating and Maintenance Costs (O&M)
- 2. Service Level Incentive Scheme (SLIS)

The first deep dive session of workshop 3 began with an in-depth overview of the fixed and variable O&M costs for SDP. From the outset, the presentation established a baseline understanding of SDP's O&M costs by identifying routine asset maintenance (RAM) and labour as the dominant drivers of fixed O&M costs and chemical costs as the driver of variable O&M costs.

With an understanding of the pre-existing drivers of costs, SDP presented a proposal for an O&M allowance increase to enable the plant to meet increased operations and availability requirements under its new Network Operator's Licence and the GSWS. Whilst the operating paradigm shift to 'always-on' is a key reason for the proposed allowance increase, rising treatment costs (chemicals) since RP2 and the increasing age of the plant's assets are also critical factors in the development of the allowance increase proposal. Supporting the value and need for the proposed increase SDP presented their forecast increased O&M costs over the coming regulatory period, comparing FY22 to RP3. In conjunction with the O&M proposal, SDP proposed to align the asset life assumption for the pipeline to its actual design life of 100 years, in contrast to RP2s determination of 120 years.

The final topic of discussion for engagement workshop 3 was Service Level Incentive Schemes (SLIS). The presentation established that the current incentive approach for SDP is the abatement mechanism, which presumes a binary on/off operating paradigm. This current mechanism was designed before the change in

operating approach required by SDP's new Network Operator's Licence and is no longer appropriate nor efficient. SDP proposed a new SLIS which refines elements of the current abatement mechanism, seeks performance calculations each financial year, allows for end-of-period revenue adjustments, provides maximum reward or penalty under the SLIS and applies to the entire plant fixed charge. SDP presented the intricacies of the proposal in fine detail and posited that their proposal would reduce insurance premiums by up to \$3m per annum.

Workshop 3 topics	Workshop 3 key points
Recap of workshop 2	 SDP's key RP3 proposals on energy Fixed and Variable energy increase Energy efficiency, staggered membrane replacement program Energy prices Adjustments to EAM
Operations and maintenance costs	 Key drivers of fixed and variable costs Proposal of increased O&M allowance to align with new GSWS requirements, maintenance for ageing assets, rising treatment costs Redefine pipeline lifetime in RP3
SLIS	 Current SLIS abatement mechanism no longer relevant to SDP under GSWS Proposal of new SLIS Reduction of insurance premium by moving to the new SLIS framework, insurance cost forecasting

4 KEY THEMES AND INSIGHTS

While Sydney Water expressed general support with much of the content and proposed changes to costs and operating that SDP presented, the workshops were a chance for the attendees to ask questions, interrogate the data and thinking process that led to these decisions being made. We acknowledge that Sydney Water representatives will reflect on the content and conversations from the workshops, and sought further information from SDP, before discussing with their colleagues and executive before making a formal response through the IPART engagement process. The following section provides commentary on the overarching spirit of the types of discussion and questioning during each workshop.

4.1 Workshop 1

While other areas were discussed and are outlined below, the key themes and discussion points for workshop 1 included:



An overview of the discussion themes and points under each theme are as follows:

Background and operational information

- Clarifications for Sydney Water representatives that were newer to the organisation or without that historical knowledge base of the Sydney Desalination Plant history and its operations
- How the Sydney Desalination Plant works and operates, including in depth discussion during the tour on the consumables such as membranes
- Collaborative discussion on the regulatory framework/governance arrangement and sharing of ideas i.e., who is who and where does everyone sit
- Energy use (while not a main topic area, this resulted in a significant conversation)
 - A suggestion was made regarding load shedding. Sydney Water gave a recent event where the context at that time would have made a request for load shedding too high a risk
 - How much the plant uses, its contractual obligations and associated cost structures
 - Potential on site renewable energy sources, and whether energy savings could be made
 - Energy sales, relationship between energy contracts and capacity needs

Capital expenditure

- How it factors into the cost structures under the GSWS, considering increased operational requirements
- Understanding new capex will be a year-by-year process in analysing new operations requirements and manufacturers' average life span requirements for reverse osmosis membranes to retain warranty coverage
- Key increase will be in chemical costs and energy costs

• Operating under new GSWS

- Sydney Water suggested flexibility in the desalination plant operations would have implications on operations in the network, and for them, optimising shutdowns and maintenance is important and could be an innovation piece for SDP and Sydney Water in the future
- Sydney Water noted that it is important to document the proposed minimum daily production level rationale well so that it can be understood by all stakeholders
- Cost difference between operational mode and water security mode
- Risks in process of scale back/shut down (if required) and restart for SDP is too high
- Sydney Water clarified the terminology being used should be 'continuous availability' rather than 'continuous production', as SDP may need to be offline for essential maintenance. The intent of the GSWS is that we do not have to wait 8 months for SDP to resume production after an outage.
- Suggestion to shift the terminology of thinking about SDP as a security asset changed to a 'production asset'
- Broad acknowledgment of the operations paradigm shift from 'drought response' to 'always-on' under GSWS, its impacts on Opex and Capex
- Sydney Water commented that in some situations the risk is too high to the system to have SDP running at a lower production rate. Flexibility in production is key, as optimising shutdowns, maintenance and system needs is important. Sydney Water noted the benefits of increased availability from SDP have not been fully explored, and this could be a future innovation piece for both SDP and Sydney Water in the future
- Cost structures under new GSWS
 - Sydney Water reflected that on initial view, SDPs proposal for negotiated charges seemed reasonable for a limited range of services and where Sydney Water has visibility of SDP's cost impacts (open book). Sydney Water also noted that flexibility would be needed in the case of emergency scenarios
 - Sydney Water sought to understand how the concept of deferred regulation would work, including how and when SDP costs are passed through to them and then the final customer bill.
 - What should be considered baseline production and why, what should be in fixed costs compared with variable
 - Where do the costs fall in day-to-day operations, can they be fixed, rather than part of the variable portion
 - Sydney Water acknowledged the complications of shutdown and restarts on SDP operations and staff, variables in plant costs and the unaccounted fixed cost of availability that SDP will incur for additional process water that remains without coverage in any framework or determination. However, Sydney Water anticipated that these 'extra' costs during shutdown and restarts should be lower than the cost of keeping the plant operating.
 - Sydney Water would also like to better understand the cost structure at the moment as well as the suggested new cost structure, in more detail
 - SDP reinforced they are focused on cost savings where possible
 - Fixed cost of availability that SDP will be incurring that has not been accounted for yet in any framework or determination
- Suggestions for change/consideration
 - Sydney Water noted they need more time to consider the information presented

- Principle 4 suggestion to reconsider it based on a discussion around whether it is a reduction or increase to cost (Principle 4 is SDP and Sydney Water should ring-fence the costs and revenues of the negotiated agreements, until IPART determines they can be passed through to Sydney Water's customers.)
- Sydney Water recommended that SDP put as much of their costs and operations within the scope of the normal operations, rather than the negotiated/variable portion
- Sydney Water recommended a discussion in the future around science and technology/innovation, and suggested looking into a pilot membrane plant in the future

4.2 Workshop 2

While other areas were discussed and are outlined below, the key themes and discussion points for workshop 2 included:







Energy requirements

An overview of the discussion themes and points under each theme are as follows:

Cost implications of new operating rules

- During the recap portion of the workshop, SDP clarified they cannot provide shutdown pricing estimates in its proposal as it is not possible to predict and requires a case-by-case appraisal
 - Majority of shut down/preservation costs are already built into fixed Opex costs
 - Costs driving shutdown/restarts are membranes, maintenance, and staffing dependant on the length of shutdown
- Sydney Water acknowledged negotiated costs framework was reasonable and requested an open book policy on costs incurred from SDP
- SDP is aiming to have as much of the known costs in the pricing within the RP3 Determination
- Sydney Water and SDP both understand the GGRP contracts well and Sydney Water continues to support SDP position
 - Group noted the current value particularly within the current market prices

• Operation during shutdowns

- Collective agreement that SDP can generally manage a short shut down (roughly 5 days) however longer shutdowns create complexity in speed of restart and costs of preservation
 - Driving variables are length of shutdown and stage of shutdown/preservation procedures
- Desire to shift terminology away from 'shutdown' to 'zero production'
- As population grows, need for ongoing availability and likelihood of shutdown outside of force majeure events decreases

Energy requirements

- Energy drives majority of variable costs
- Acknowledged that RP3 will see the need for more energy due to shift to 'always-on' operations, ageing reverse osmosis (RO) membranes
- Greatest variable energy cost driven by age of membranes
 - Decision to replace membranes currently assessed on a year-by-year basis
- Sydney Water reminded SDP about its planned requirements for Net Zero in its Supply Chain.
- SDP has been conducting membrane rotation process however implications of GSWS on operation require the system to be formalised
- Energy efficiency
 - Balancing energy costs due to diminishing efficiency and maintenance of ageing RO membrane with costs of replacing membranes

- Balance offset of capital vs increase in energy
- Sydney Water would like greater information on supply and manufacturing of RO membranes
 - o 3 reliable global manufacturers, supply chain is very slow, takes over 6 months from request
- In terms of RO membrane technology, innovation and efficiency in the space has been stagnant for many decades
- Discussion of various green/renewable energy generation options
 - Sydney Water asked why SDP does not own their own generation hardware
 - Suggestions of solar/renewable batteries to offset energy by Sydney Water initially flagged as inefficient by SDP due to the amount of energy required, capital costs and quality/efficiency of the energy not consistent for its needs
 - SDP to provide brief analysis to substantiate their position
- SDP to consider solar energy generation for plant lighting and basic utilities
- Veolia play a role in R&D for better technologies and seeking efficiencies in processes
- As SDP progresses through RP3 and gains better understanding of new operations, efficiencies will improve with experience
 - SDP looking into efficiencies in use of chemicals and processes
- Sydney Water was keen for SDP to consider further efficiencies, and how this could be tweaked from a process perspective, including improving energy output. SDP advised that they are being increasingly efficient where possible, however, energy use will be increasing. There is no projected step change in energy efficiency from new technology at this stage unfortunately, however, a continual focus on energy efficiency was agreed to.

Energy Adjustment Mechanism

- Extensive expert consultation from Seed Advisory's Peter Eben sought on this topic by SDP, Peter presented the session
- SDP EAM proposes reduction in risk exposure
 - New GSWS rules further limit SDP ability to influence or manage risk
 - Sydney Water highlighted this would be shift risk to customers
- Proposed sharing 95:5 ratio determined by terms of reference that stipulate SDP must bear some cost
- Sydney Water engaged with and listened to SDP presentation on their stance that forward trading is not prudent, nor efficient
- Sydney Water questioned the value of forward vs spot pricing
- SDP advised that due to the unknown factors in operations, including to be utilised for emergency
 response it is impossible to have sufficient certainty over production requirements to predict what
 energy will be surplus to requirements under the GGRP contracts
- SDP do not want to sell away the security of the fixed energy price particularly considering the volatility in the energy market that is occurring
- Sydney Water does not have a firm view on its support of the proposed EAM sharing ratio as yet, they do not have a view either way

4.3 Workshop 3

While other areas were discussed and are outlined below, the key themes and discussion points for workshop 3 included:



An overview of the discussion themes and points under each theme are as follows:

• Operations and maintenance

- O&M costs make up a substantial proportion of overall operational expenditure
 - Predominantly driven by routine asset maintenance and labour
 - Variable costs driven by chemical/treatment costs, which have risen substantially
 - The rise in chemical costs was acknowledged by Sydney Water and reflected in their own experience
- What contributes to corporate costs in O&M?
 - Staff increases from 9 in RP2 to 13 under RP3, admin, office, external advisors
- Sydney Water acknowledged that SDP is already incurring costs above their O&M allowance
- Sydney Water engaged with SDP's proposal of step up in O&M allowance and alignment of pipeline asset life to design life of 100 years without criticism
- IPART deemed O&M contract not prudent and does not recognise their contract with Veolia
 - Sydney Water asked if SDP could pass the contract costs through?
- Are SDP cost increases a step change in price or a consistent trend upwards? What is the start point and what is the trend?
- Service Level Incentive Scheme
 - Acknowledged that the current abatement mechanism is no longer likely to be effective or useful under SDP's new Network Operator's Licence
 - Is capacity testing separate from APR?
 - Capacity testing is separate from APR, however capacity testing could potentially happen within SDP annual production
 - SLIS would only apply to annual production requests, not supplementary requests
 - SDP proposed an end-of -period true-up for any revenue penalties or rewards under the SLIS
 - Sydney Water appreciates ramp up speeds the most during emergencies, and suggested that positive incentives could be introduced, similar to Sydney Water's arrangements with WaterNSW
 - Sydney Water noted that positive incentives only may be appropriate in emergency situations, however it would like to engage with SDP further on this issue ahead of RP4.
 - SLIS proposal is to be driven by prioritising customer value
 - Discussion on how SDP could be incentivised for speedier response ties

- Is there any incentive that could encourage SDP to go over and above in emergency response situations?
 - SDP believes they have good ongoing relationship with Sydney Water and their track record proves they already go above and beyond when called upon
- Sydney Water expressed that it is critical that SDP document and meet agreed upon fixed production days
 - Over past two years SDP has been more important than any other contingency source, so emergency response is important

Insurance

- Lower insurance costs based on lower financial risks under proposed SLIS
- Proposal seeks consistency between SLIS and what SDP are compensated for in their insurance policies
 - There are limits to what can be covered by insurance as demonstrated by the fact that insurers would not cover SDP for business interruption in the event of an oil spill where SDP proactively shuts down and closes intakes to avoid equipment damage. Insurance would only cover SDP for material damage it incurs.
- Is Force Majeure a carve out from the annual production request SDP delivers?
 - In terms of revenue, Sydney Water pays the fixed costs that SDP incurs, however, there are no variable costs covered
- Sydney Water indicated that a reduction in premium costs could be of value to Sydney Water and customers, but whether the overall proposal is acceptable would depend on an assessment of any changes in its risk exposure
- Sydney Water expressed that further information and analysis regarding SDP's insurance corporate costs forecasts would be appreciated.

5 NEXT STEPS

The structured process in the lead up to and including the stakeholder workshops involved:





Forecast the costs of providing these expected services



Calculate the prices

required to recover

these forecasts costs



Consider incentive and risk management frameworks to support customers' long-term interests

The next steps are for SDP to submit their final proposal for RP3 to IPART in September 2022. IPART will review and consult on the proposal between September 2022 and June 2023. The outcomes and determinations from SDPs submission for RP3 will go into effect from July 2023.



Stakeholder and public engagement and consultation (June to August 2022)



Submission of proposal to IPART (September 2022)



IPART to review and consult on proposal (September 2022 to June 2023)



Determinations take effect from 1 July 2023

APPENDIX A – PHOTOS OF THE SITE TOUR







Tour of the Sydney Desalination Plant

