

Pricing Submission to IPART

Prices from 1 July 2023
to 30 June 2027

Plain English
Summary



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SYDNEY
DESALINATION
PLANT

**Delivering
water
resilience...**

Up to
250ML/day
15% of Sydney's daily water needs

100% 
Renewable Powered

sustainably...

**GGRP
contracts**



Impact of our proposal
on customer bills
in 2023-24

+0.0%

**... and
affordably**

Background

The Sydney Desalination Plant (Plant), which was constructed in response to the worst drought in 100 years and commenced operations in January 2010. The Plant is owned and managed by Sydney Desalination Plant Pty Limited (SDP). The Plant was designed and constructed as a drought response asset, able to commence operation and produce at maximum capacity for the duration of a drought. In recent years, however, the Plant has taken on a broader role than just drought response.

Sydney's water security is increasingly threatened by the worsening impacts of climate change and natural disaster events such as droughts, severe bushfires, storms and floods that put water quality at risk in the existing rainfall dependent supply network. At the same time, demand for water continues to increase due to urban growth, warmer weather and urban greening projects.

The increased role that SDP can play in responding to these developments has been identified in the NSW Government's Greater Sydney Water Strategy (GSWS)¹, which has prompted changes to our Network Operator's Licence.² Essentially, under this new Network Operator's Licence the Plant is expected to operate on a 'flexible full-time basis', producing a minimum baseline volume of approximately 23 GL per annum up to a maximum of 91.25 GL per annum, depending on annual production requests from Sydney Water, as well as other production requests that may be issued by Sydney Water such as emergency production requests. The new Licence is expected to take effect from 1 July 2023.

The Independent Pricing and Regulatory Tribunal of NSW (IPART) regulates prices we are allowed to charge Sydney Water for providing the services defined in our Network Operator's Licence. IPART's current decision on our prices will expire on 30 June 2023, following a one-year extension to clarify our future role as part of the GSWS. We have therefore prepared a new pricing submission, which explains our expenditure needs for the four-year period commencing on 1 July 2023 and the prices needed to recover these efficient expenditures.

We are also proposing modifications to the regulatory framework so that it supports a more flexible role for the Plant to maximise the value it delivers to customers. IPART will consider our pricing submission and seek stakeholders' views as part of its review process.³

The purpose of this overview document is to provide a plain English summary of our pricing submission. Further detailed information is available in our formal pricing submission, which is published alongside this plain English summary and is available on our website.⁴

1 NSW Department of Planning, Industry and Environment, Greater Sydney Water Strategy, August 2022.

2 All references to the SDP's new Network Operator's Licence are to the Licence recommended by IPART for approval by the NSW Minister for Lands and Water.

3 Further details of IPART's review will be available on its website www.ipart.nsw.gov.au

4 www.sydneydesal.com.au

1. The plant and its history

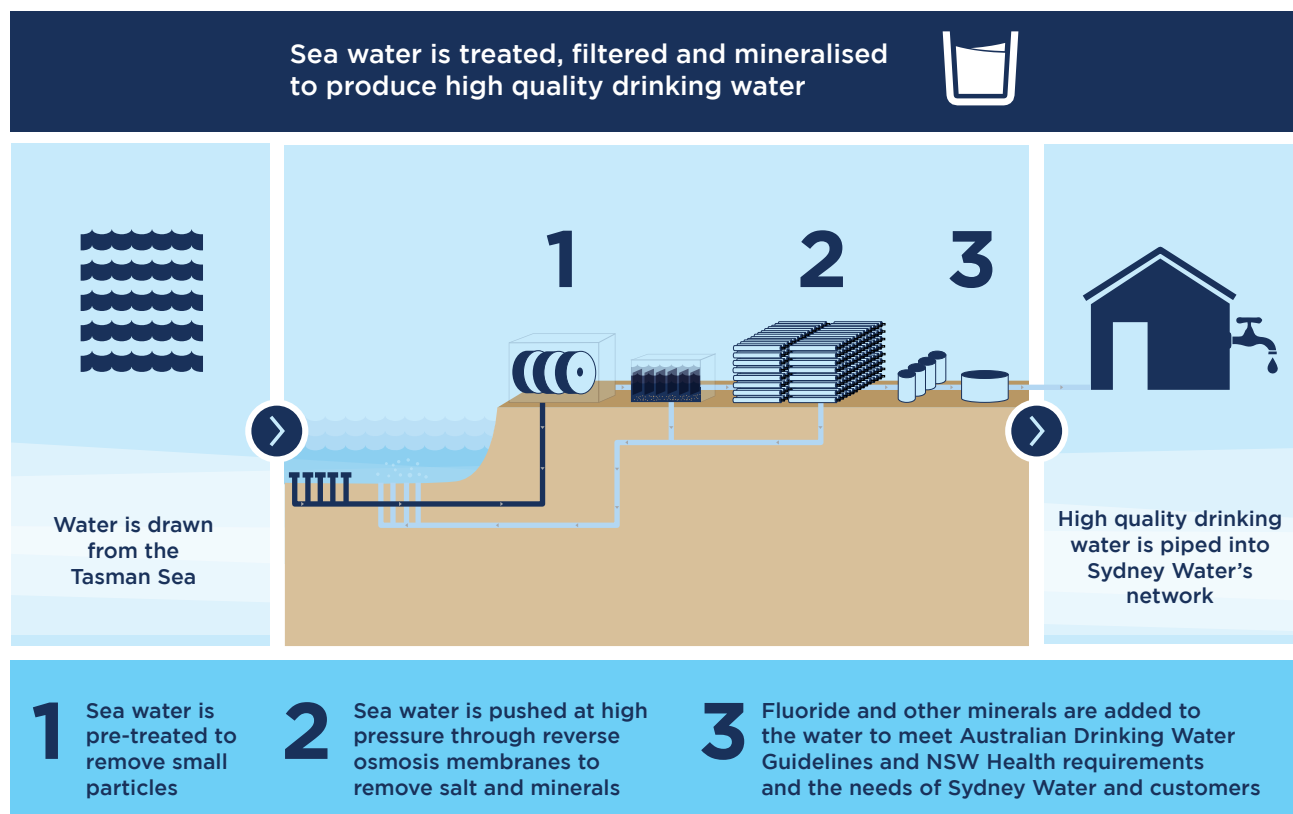
1.1 The Plant

The desalination plant is Sydney's only non-rainfall dependent source of drinking water. It is a large-scale reverse osmosis (RO) membrane facility located at Kurnell, Sydney. It is capable of providing up to 15% of Sydney's average drinking water needs by treating, filtering and remineralising seawater to produce up to 91.25GL per annum of high-quality drinking water and transporting this via an 18km pipeline to Sydney Water's system at Erskineville. Sydney Water then distributes the water alongside water from other supply sources, to homes and businesses across the Greater Sydney region.

The Plant is capable of providing up to 15% of Sydney's water needs without any reliance on rainfall

Our desalination plant uses RO membrane technology to turn seawater into fresh water. There are several steps to this process, which are summarised in the figure below.

How is water produced by the desalination plant?



The production of water from the Plant is energy intensive. Our Plant is 100% powered from renewable energy purchased through long-term contracts for renewable energy with Infigen Energy (now Iberdrola Australia). The energy contracts were originally competitively tendered and executed by Sydney Water and we must purchase energy through those contracts under the conditions of the Greenhouse Gas Reduction Plan (GGRP) within our Project Approval. These contracts are referred to as the GGRP contracts. Water customers have told us that they remain supportive of SDP's use of renewable generation, with 77% of water customers being extremely or very supportive of renewable power being used by SDP.⁵

⁵ SDP, Community Survey Quantitative Overview, Stollznow, January 2021, page 32.

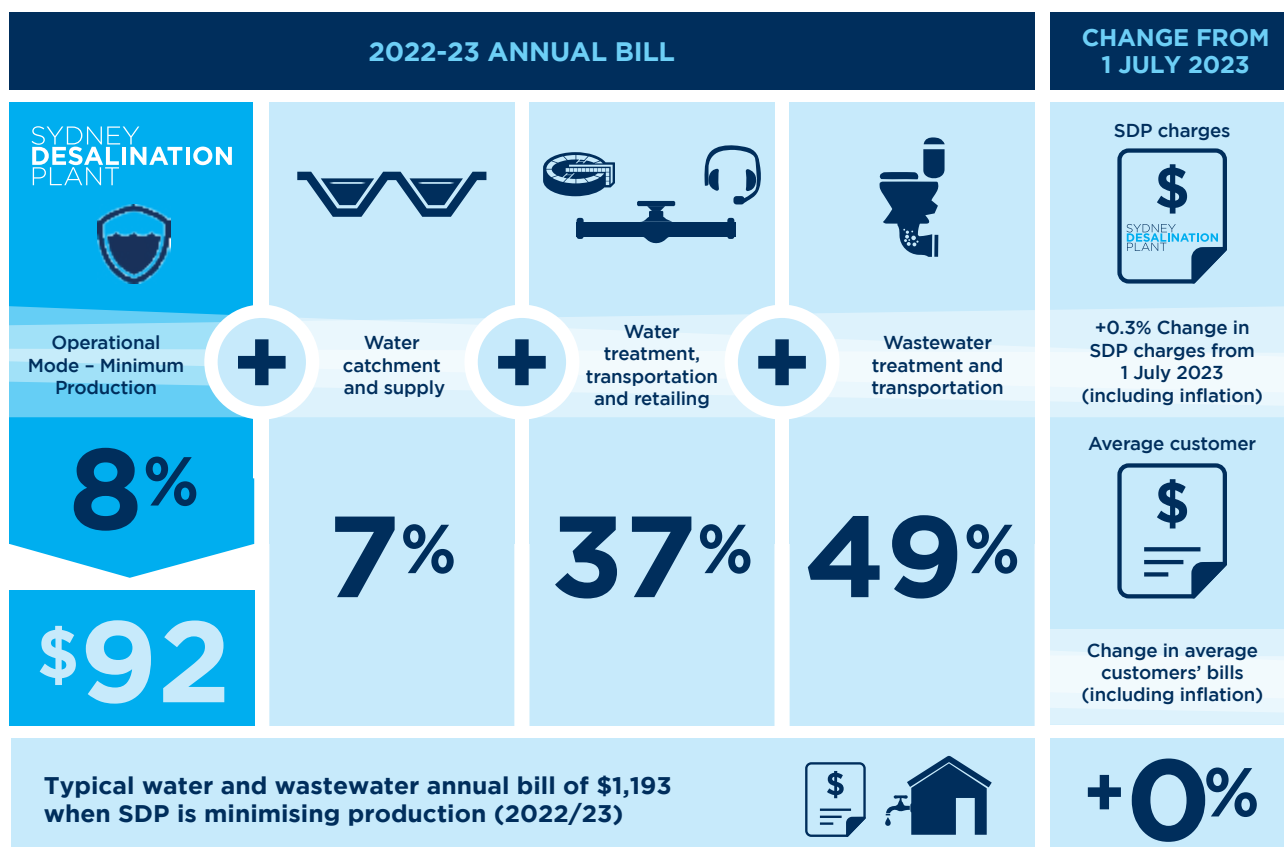
The operation and maintenance (O&M) of the Plant and pipeline is provided by Veolia Water Australia (Veolia) under a long-term contract, which was part of the initial design and construction of the Plant. Veolia is the largest water services company in the world and a global leader in desalination and water supply management. In addition to holding the O&M contracts for the Plant and pipeline, Veolia also operates and maintains a range of other treatment plant's including the Gold Coast Desalination Plant, the Illawarra and Woronora Water treatment plants for Sydney Water, and the water and wastewater treatment plants for Hunter Water. This significant footprint in NSW (and the wider eastern coast of Australia and indeed globally) provides advantages in general corporate support, operational and technical expertise and support, knowledge sharing, innovation, operational excellence, continuous improvement opportunities and experience in similar markets and conditions to the benefit of customers.

The Plant was originally designed and constructed as a drought response asset, able to start up as dams deplete and then produce at full capacity for the duration of a drought. To commence operations after being in shutdown, the Plant essentially needs to be recommissioned before it can start producing water, which requires a significant labour recruitment, training, asset replacement and testing program. The timeframe for ramping the Plant up to full production is approximately eight months, or possibly longer depending on the maintenance program during shutdown and the age of the Plant at the time of shutdown.

Recent experience has demonstrated that the Plant can offer additional value by remaining operational and producing a baseline level of drinking water, from which it can more dynamically increase and decrease production on request, thereby providing greater resilience to the water system. The NSW government has recognised this additional value in developing the GSWS and made changes to SDP's Network Operator's Licence so the Plant can operate as more than just a drought response asset.

The figure below provides an indication of the costs of the services we provide, alongside the other components of a typical water customer's current bill. It shows that the services provided by us cost approximately \$92 per annum per customer or approximately eight per cent of each water customer's bill, when the Plant is delivering its 'minimum production' (outside drought).

How much does the desalination plant cost?





1.1 Our history and experience

Our Plant was constructed in response to the severe “millennium drought” which affected much of NSW, including the Sydney basin, and which saw Sydney’s dam levels falling below 34% in 2007. Following its commissioning in 2010, the Plant ran continuously for two years through a proving period to test its capacity and reliability in providing high-quality drinking water. By June 2012, the dam levels in Sydney exceeded 94% and the Plant was put into a deep state of preservation, known as ‘Water Security Mode’, in order to minimise costs for customers.

In December 2015, a tornado caused severe and widespread damage to the Plant. As a result, we embarked on a rebuild project, which involved a significant number of assets being inspected, repaired or replaced. Our insurance coverage ensured that customers did not bear the costs of these major repairs, which were completed in October 2018. Customers did however receive the benefit of a refurbished Plant at no additional cost.

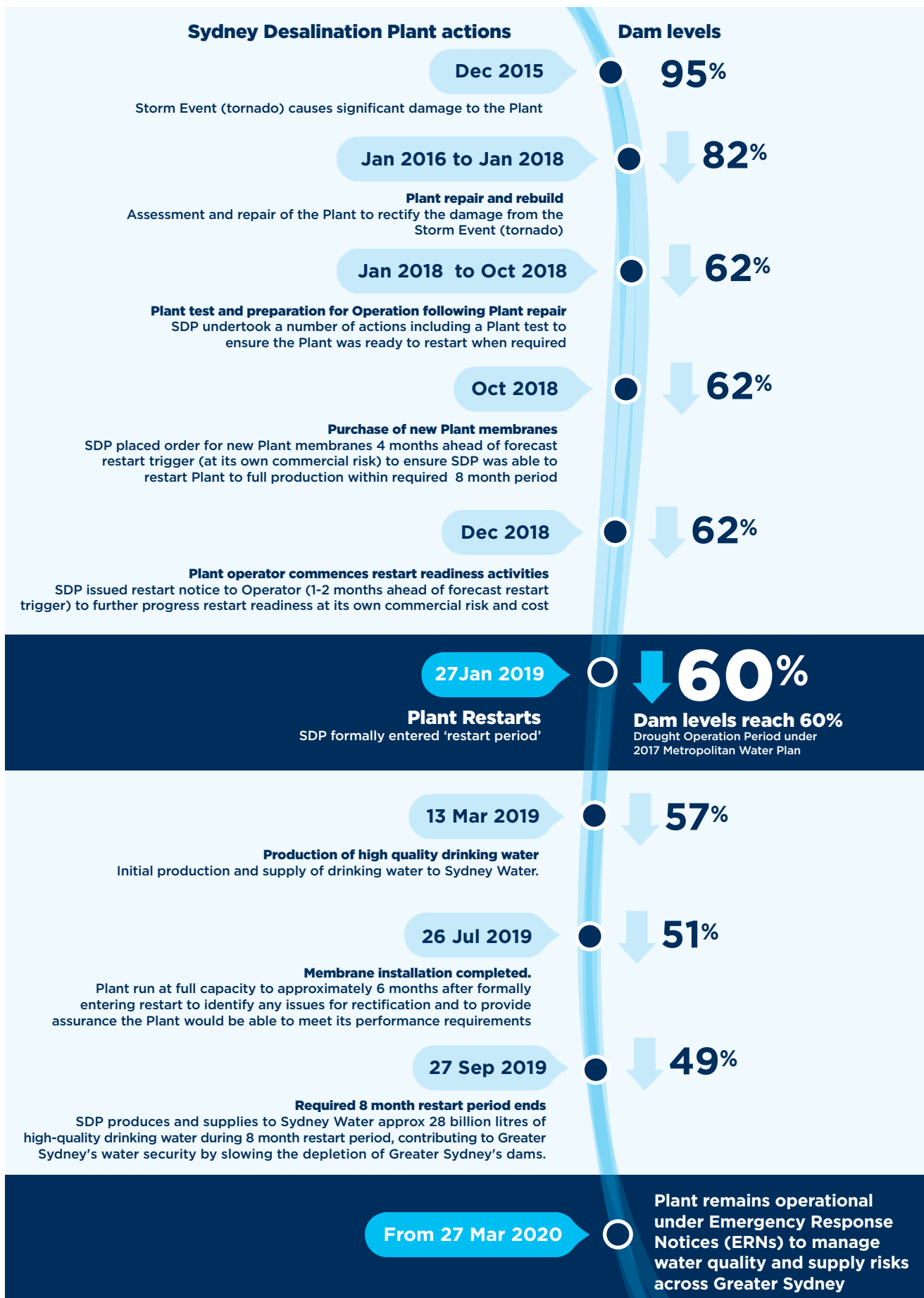
As the rebuild project reached completion, it became apparent that the Plant may need to return to full production as Sydney’s dam levels were rapidly declining. SDP restarted the Plant in January 2019 when greater Sydney’s dam levels fell below 60%, which triggered the Plant’s operation under SDP’s previous operating licences. Even though Sydney’s dam levels had recovered, from March 2020, the Plant remained operational as it addressed dam water quality challenges arising from bushfires followed by heavy rain events, and flooding across NSW. The Plant has also provided operational support by increasing water supply during significant maintenance tasks in Sydney Water’s supply network.

These recent operational experiences illustrate that the Plant can play a much broader role in water security in the future. The key milestones in our operations since December 2015 are set out below.

While the Plant was constructed in response to drought, our operational experience proved that drought is only one type of water security event that may require the support of the Plant. At the same time, there is increasing water demand across greater Sydney, including from a growing population, demand for backyards, open space, sporting fields and other key aspects of our urban form — which places additional strain on the supply system.

A growing population and increasing climate related stresses including more severe droughts, bushfires and floods have highlighted the value of the Plant remaining operational outside drought periods to assist Sydney Water in managing Greater Sydney’s water needs.

Our key operational milestones from December 2015



Our role is changing

Historical



Drought



Water quality

Future



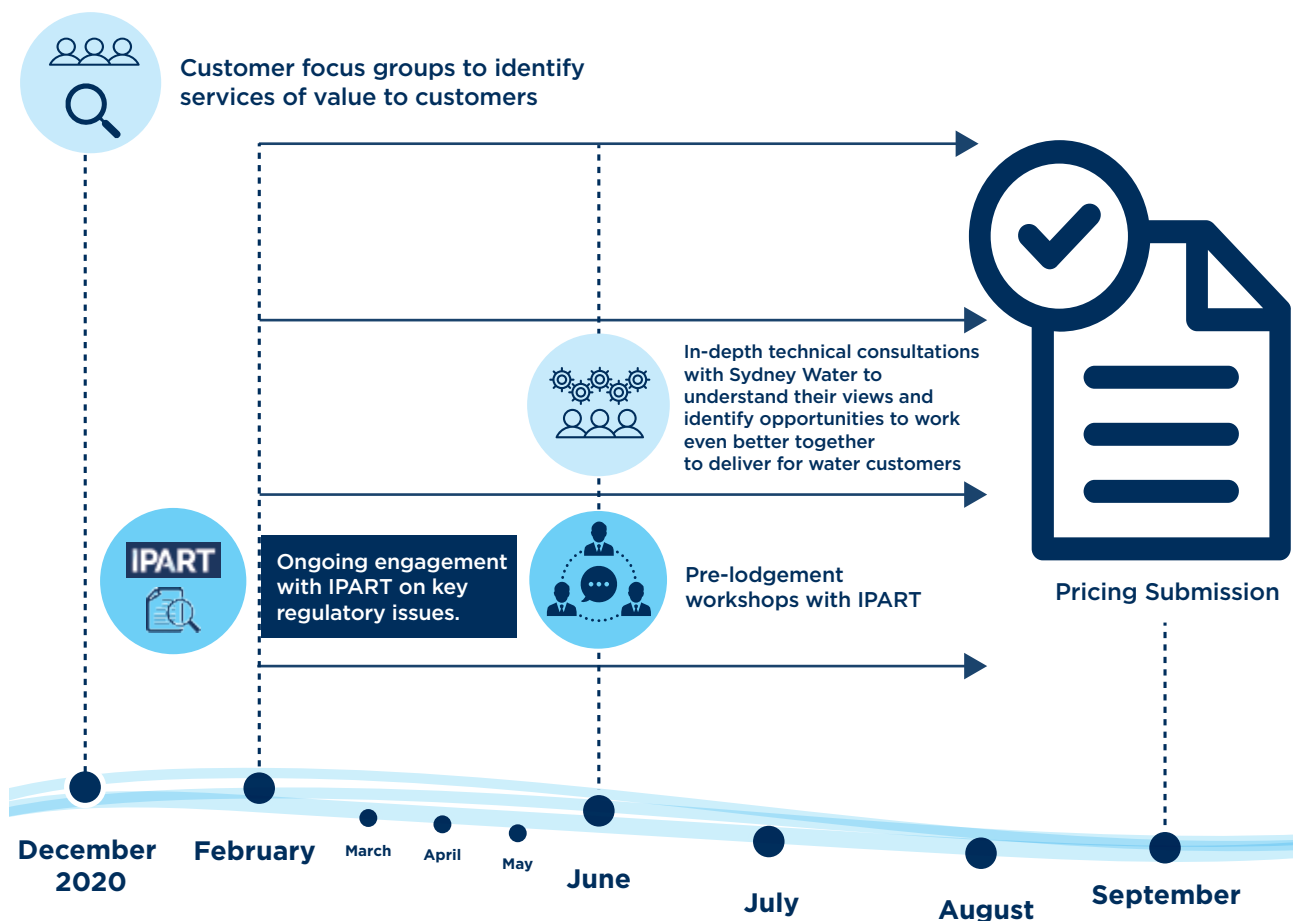
2. Our vision for the 2023-27 regulatory period

Our vision for the 2023-27 regulatory period is to deliver additional customer value from the Plant by operating more flexibly to improve water security and resilience in the most efficient way possible

2.1 Understanding customers' needs and preferences

Our starting point in developing this submission was to consider the views of water customers and our key stakeholders.

Stakeholder views help us develop the best value proposition for customers and have shaped our submission



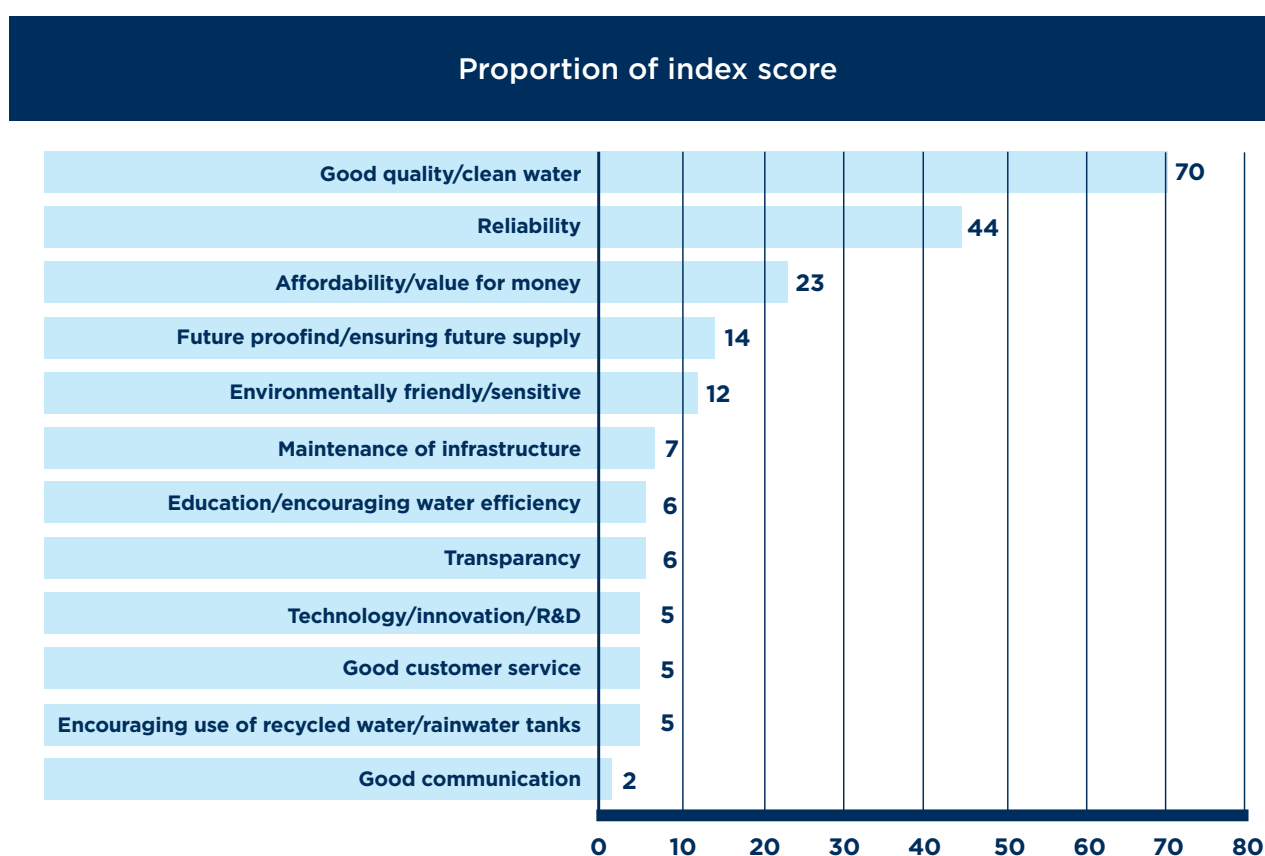
To understand our customers' preferences, we established an engagement plan, which involved:

- An independent community survey, conducted by StollzNow Research, which was conducted in December 2020 and completed in January 2021;
- Detailed discussions, workshops, and deep dives with our customer Sydney Water and other key stakeholders; and
- Pre-lodgement workshops with IPART.

In addition to our engagement plan, we also considered the lessons arising from Sydney Water's extensive engagement with customers in developing its pricing submission to IPART in 2020.

Sydney Water's engagement on customers' preferences provides useful guidance as we consider our plans for the future. Sydney Water's analysis shows that good quality/clean water and reliability are most important to water customers.

Which service attributes do customers prefer?⁶



Sydney Water, Final Report, Customer-informed IPART submission, Appendix 3E, 30 April 2018, page 54.

Note: The index score is generated by attributing three points to a value each time it is ranked first by a participant, two points to a value each time it is ranked second, and one point to a value each time it is ranked third. Scores are then indexed so that a score of 100 equates to a value being ranked first by all participants.

Clean, reliable water supply is valued highly by customers – and therefore indicates strong support for the services we provide

⁶ Sydney Water, Final Report, Customer-informed IPART submission, Appendix 3E, 30 April 2018, page 54.

Our own research, which was conducted by StollzNow Research, aligns with Sydney Water's findings that customers are most concerned about clean, reliable and uninterrupted drinking water. The feedback from customers included the following points:

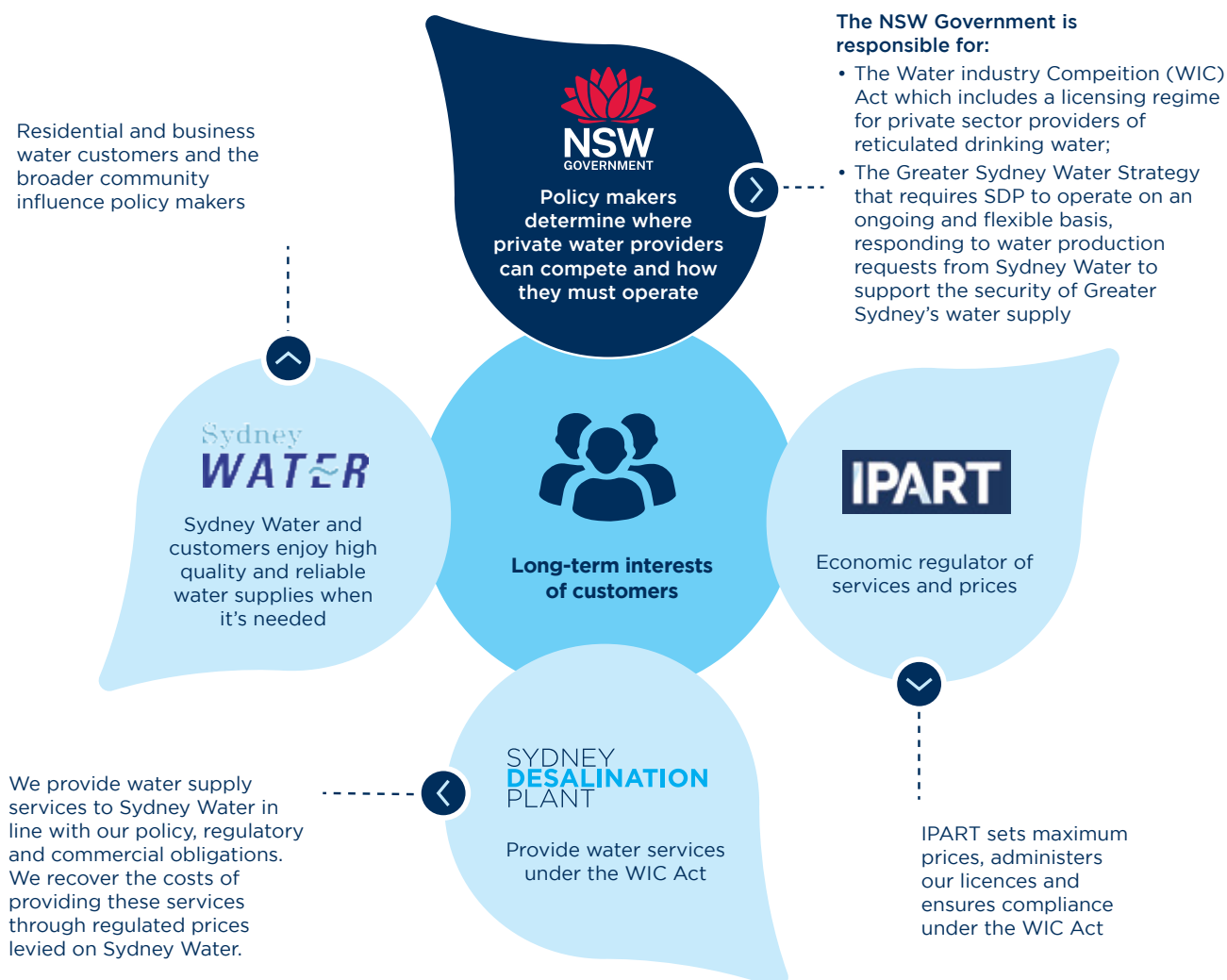
- Customers appreciated living in a city with clean, reliable water. Customers understood the variability of water supply from the dams and had experienced water restrictions. Many customers take pride in conserving water.
- Customers support the Plant's use of renewable energy generation, with 77% of survey respondents indicating that it is either extremely or very important that SDP uses renewable generation.
- Some participants expressed concern about future water supply, including that it could be under threat due to population growth, unpredictable rainfall for Sydney, and lack of infrastructure.
- Current water bills are viewed as being reasonable (particularly compared to other utility bills), are consistent, rarely fluctuate and provide a valuable service.

Consistent with this feedback, our vision is to establish plans and regulatory arrangements that drive additional value from the Plant to the benefit of water customers. The remainder of this chapter explains how we propose to deliver on this vision.

2.2 Greater Sydney Water strategy

The figure below shows the roles and responsibilities of the key players in the water sector in relation our Plant.

Role and responsibilities in the water sector in relation to SDP





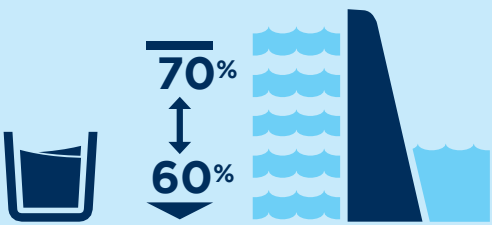
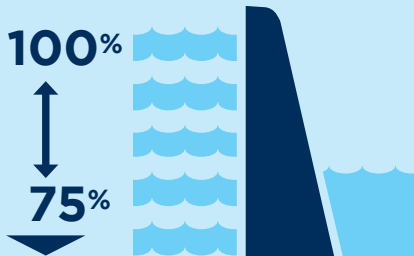


The GSWS charts the long-term vision and direction for delivering sustainable and resilient water services to greater Sydney, including the Illawarra region and the Blue Mountains, for the next 20 years and beyond. It aims to address key challenges such as unpredictable climate events (e.g. extended droughts and severe floods) which have created uncertainty, and significant forecast population growth. It outlines:

- How the NSW Government intends to optimise the use of existing water supply including the use of desalination
- water efficiency and conservation programs

A key outcome arising from the GSWS for SDP, is a major change in how the Plant will operate during the 2023-27 regulatory period. Previously, the Plant was required to operate in response to drought, when dam levels fell below a fixed trigger point. In future, our new Network Operator's Licence will require the Plant to operate more flexibly to manage the risks associated with drought and in response to water production requests from Sydney Water to manage system shocks, outages, and maintenance.

The figure below shows how our new Network Operator's Licence is expected to redefine the types of services we provide and the arrangements that govern their provision.

SDP's new Network Operator's Licence will change the services provided by SDP

SDP's 2017 Network Operator's Licence	SDP's 2022 Network Operator's Licence
 2017 Metropolitan Water Plan Fixed triggers for SDP operation and other drought measures	 2022 Greater Sydney Water Strategy Flexible full-time operation of SDP to manage Greater Sydney's water security
SDP required to: <ul style="list-style-type: none"> • Start Plant and maximise production of high-quality drinking water when dam levels are between 60% and 70%, • Produce drinking water when requested by Sydney Water during emergencies 	SDP to respond to water production requests from Sydney Water in accordance with SDP's Network Operator's Licence, the Decision Framework and WSA. This to balance the following objectives to: <ul style="list-style-type: none"> • Maximise the yield contribution of the Plant to Greater Sydney's water supply • Slow dam depletion rates during droughts • Operate the total system to reduce the risk of dam spill where practical • Respond to system shocks, outages and maintenance. • Dam levels above 90%: SDP minimises production in state of "readiness" to respond to production request • Dam levels between 75-90%: SDP produces water following Sydney Water's production request • Dam levels below 75%: SDP maximises production of water unless exceptional circumstances
	
 SYDNEY DESALINATION SDP switches to shutdown unless drought response or emergency response notice issued	 SYDNEY DESALINATION SDP remains operational to respond to Sydney Water production request

Our view is that the new operating environment will deliver better outcomes for our customers. SDP welcomes the changes, which provide greater clarity regarding our operational role and recognises the value that the Plant can provide beyond drought response.

A new Network Operator's Licence will enhance our role in delivering more resilient water supply for the benefit of customers

As explained above, our new Network Operator's Licence will change the way the Plant operates and our future expenditure requirements. For example, our membrane maintenance and replacement programs must take account of the Plant's continuous operation to maintain high-quality drinking water and minimise our energy costs. We will also need to retain a skilled and highly-trained workforce onsite to ensure the Plant is able to respond to Sydney Water's production requests. The new Network Operator's Licence will, therefore, have implications for our efficient costs and revenue requirements for the 2023-27 regulatory period.

2.3 Enhancing the regulatory framework

IPART's regulatory framework needs to support efficient outcomes by providing SDP with incentives that encourage and reward outcomes that are in customers' long-term interests. For example, this means making cost savings where it is prudent to do so and efficiently responding to Sydney Water's water production requirements. In practice, the more flexible operating requirements placed on SDP necessitates changes to some of the regulatory framework's incentive mechanisms, which were designed for SDP acting principally as a drought response asset. In the future, SDP will operate as an integrated water resilience asset serving Greater Sydney, which necessitates a change to the existing tariff adjustment mechanism — known as the abatement mechanism.

Over the 2017-23 Regulatory period SDP responded to several water quality emergencies driven by the bushfires, flooding and major system maintenance needs. This role was not expected at the time of the 2017 Determination. We have had to write to IPART to ensure that recovering our reasonable costs of responding to Emergency Response Notices issued by Sydney Water would not result in an actionable breach of the 2017 Determination. IPART has been accommodating in addressing these issues and informing us that it would treat our arrangements as only technical non-compliances with the 2017 Determination. However, it would be more administratively efficient and provide enhanced outcomes to customers if changes were made to the regulatory framework.

We are proposing two types of enhancements to the regulatory framework to promote better customer outcomes:

- The introduction of negotiated agreements between SDP and Sydney Water for unexpected changes in the level of service we are required to provide. We discuss this issue in the next section.
- Changes to the incentive mechanisms are needed to account for the more flexible operation of the Plant and the implications of this on SDP's ability to manage costs and risks.

Our proposed modifications relate to the abatement mechanism, the Energy Adjustment Mechanism and the arrangements for adjusting revenues in response to unforeseen events, as explained below:

- The current abatement mechanism penalises SDP if water production does not reach maximum capacity within a specified timeframe and production is not maintained at that capacity. The mechanism is predicated on the Plant being primarily a drought response asset, and as such, the mechanism does not account for the possibility that the Plant is required to run below full capacity for extended periods, which needs to be changed given the flexibility embodied in the new Network Operator's Licence. We have therefore proposed a new 'Service Level Incentive Scheme' (SLIS) to replace the abatement scheme, which promotes better outcomes for water customers by:
 - Focusing on SDP's performance in responding to Sydney Water's annual production requests to increase output above the minimum level of 23 GL per annum, which is key in delivering increased value to customers.
 - Establishing a measure of performance that is within SDP's control, so that the SLIS will be



effective in driving improved performance for the benefit of customers.

- Setting an appropriate cap on incentive payments, so that incentives do not drive SDP to focus on financial risk mitigation at the cost of focussing on efficient service provision. A cap would also help ensure the prices customers pay for our services remains stable.
- Under the GGRP contracts, SDP is committed to purchasing a minimum volume of renewable energy at a set price. Where some of this energy is surplus, it needs to be sold into the energy market. To drive efficient management of surplus energy price risks, IPART developed the Energy Adjustment Mechanism (EAM), which shares the gains or losses on the sale of surplus energy between SDP and customers.
- The current EAM settings expose SDP to a level of risk that is disproportionate to the level of control it has over the size of surplus energy gains and losses on sale. Under its new Network Operator's Licence, SDP will have even less ability to manage surplus energy price risks because it will have less forewarning over how much energy will be surplus to requirements. This will depend on when and how much water Sydney Water requests from the Plant. To address this issue, we have suggested some changes to the EAM to maintain its incentive properties but remove the potential for windfall gains or losses arising from market changes that are beyond SDP's control.
- The introduction of new arrangements for end of period true-ups and in-period re-openers. These arrangements allow SDP's revenues to be adjusted to account for unexpected events outside of SDP's control, consistent with best practice regulation. SDP's view is that relatively minor changes to the 2017-23 regulatory arrangements will ensure that SDP is able to recover the efficient costs of the services we provide, consistent with regulatory best practice in other sectors.

In summary, our pricing submission recommends several changes to SDP's current regulatory framework to ensure it supports the flexible operation of the Plant, recognising those costs we can control and those we cannot. Our proposed changes are aligned with IPART's recent review of the regulatory framework, which is intended to lift the performance of the water sector for the benefit of customers.

The regulatory framework should be modified to encourage and support more flexible water production that is responsive to the water supply system's changing needs

2.4 Negotiated outcomes that deliver ‘win-win’ outcomes

The regulatory framework does not currently allow SDP and Sydney Water to negotiate the provision of services that are mutually beneficial and would deliver better outcomes for customers. As explained below, our view is that this situation should change to deliver a ‘win-win’ outcome for customers, Sydney Water and SDP.

The current regulatory arrangements reflect the original expectation that the Plant would either be in shutdown mode, full production or transitioning between the two modes. In practice, the Plant has delivered significant value by operating at less than full capacity in response to emergencies or water security risks, as explained earlier. This has prompted a change to our Network Operator’s Licence, but in the meantime, SDP has been operating in technical breach of IPART’s previous Determination. These breaches were accommodated by IPART who recognised that they were minor relative to the benefit SDP was providing to customers to ensure Sydney Water was able to continuously supply drinking water. This experience demonstrates the difficulty of designing regulation to accommodate all the circumstances that may eventuate and to compensate SDP appropriately for the services it provides.

Our view is that SDP and Sydney Water should be able to negotiate agreements for the provision of services that are outside the defined services that SDP must provide. The negotiation would be conducted in accordance with principles set by IPART and in the knowledge that the outcomes would be subject to IPART’s subsequent review through a ‘framework of deferred regulation.’ The purpose of this framework would be to enable the service scope and prices to be negotiated without the risk that regulatory constraints delay the timely provision of those services. These arrangements would, for example, enable the Plant to shutdown in the unlikely event this is requested by Sydney Water and negotiate the price. This could be done without needing to assess all the potential costs that may be related to a shutdown (which will depend on the length of the shutdown amongst other factors) and set these prices in the 2023 Determination, or alternatively re-open the Determination.

Flexibility remains a key objective, so that services can adapt to the circumstances and arrangements for this to occur can be agreed quickly





3. Our expenditure plans and financing requirements

3.1 Learning from recent operational experience

During the 2017-23 regulatory period, we have gained much greater operational experience which we have considered when preparing our expenditure plans for the 2023-27 regulatory period. In particular:

- SDP and Veolia have gathered improved performance and cost data from the Plant operating in different modes. This data has improved our understanding of O&M costs and supports more robust forecasts for the 2023-27 regulatory period. Our previous operational experience was obtained during the two year proving period immediately after the design, construction and commissioning of the Plant in 2010, when the Plant was brand-new and was supported by a sizable design, delivery and commissioning team.
- The age of RO membranes is a critical driver of electricity consumption when the Plant is operating and the reliability of producing high-quality drinking water consistently at the volumes required. For the 2023-27 regulatory period, SDP has proposed a membrane replacement program that is designed to maintain the optimum average age of membranes. Our forecast electricity consumption recognises that the average age of the RO membranes will be older during the 2023-27 regulatory period and therefore the membranes will be less energy efficient.
- Following the tornado in December 2015, our decision to fully test the Plant as part of the rebuild project in 2018 enabled us to restart the Plant more quickly than anticipated. In addition, it led to a substantial saving in capital expenditure during the 2017-23 regulatory period, which we are passing onto customers in the prices we propose for the 2023-27 regulatory period.

The lessons from our operational experience during the 2017-23 regulatory period will contribute to better performance during the 2023-27 regulatory period and contribute to more efficient costs for customers. In addition, we will continue to work closely with Sydney Water, Veolia our Plant operator, and our other service providers to find opportunities to achieve further efficiencies during the 2023-27 regulatory period.

Our growing operational experience is helping us to find better ways of doing things

3.2 Operating expenditure

Our operating expenditure forecasts for the 2023-27 regulatory period take account of our recent operational experience, our improved understanding of the costs of operating the Plant continuously and responding quickly to Sydney Water's water production requests. We have worked closely with our operator, Veolia, and where additional maintenance costs are required, we have undertaken a formal evaluation process to ensure that Veolia's proposal reflects prudent and efficient costs. There will also be a marginal increase in our costs to operate at a baseline level of production rather than remain switched off outside of drought, which is essential to ensuring that we can respond flexibly under our new Network Operator's Licence. This cost is partially offset by not needing to incur shutdown and restart costs.

The Plant's energy costs include the cost of procuring electricity and large-scale generation certificates (LGCs) under renewable energy contracts that were entered into as a requirement of the Plant's Greenhouse Gas Reduction Plan (GGRP). This was an essential component of the Plant's project approval by the NSW Government. SDP's energy costs are predominantly driven by the variable cost of water production. Our forecast energy costs are based on the price of energy under the GGRP contracts and energy volumes that reflect the average age of Plant membranes. Our energy costs are stable and predictable into the future and increase each year by the consumer price index (CPI). These contracts will protect Sydney Water and customers from volatility in energy prices, including the unprecedented prices currently being experienced across the National Electricity Market (NEM), which are expected to remain high and well above the current benchmark price⁷ for at least 2023-24 and 2024-25.

Our corporate operating costs primarily relate to management of our business including overseeing the O&M of the Plant, SDP's financial management, management of cyber-security risks, council rates, taxes, and other miscellaneous costs. We also incur insurance costs to prudently manage the unique risks that SDP faces as a single asset business, consistent with the requirements of our Network Operator's Licence requirements. Unlike other operating costs such as energy, chemicals and maintenance, corporate costs and insurance are fixed and do not vary depending on whether the Plant is operating or not.

For the 2023-27 regulatory period, we have identified the following movements in our efficient costs, which have been driven by our experience over the 2017-23 regulatory period and informed by the latest market developments:

- **Increased O&M labour costs** — Based on experience over the 2017-23 regulatory period, we have identified additional roles needed to support asset preservation and reliability, and to maintain safe working conditions for O&M staff. These additional staff are already in place, but this efficient cost has not yet been recognised in our cost allowances, and this is not sustainable.
- **Increased routine asset maintenance (RAM) costs** — We are forecasting increased RAM, which is standard for a plant of this age (greater than 12 years old), including preventative maintenance. We also require increased RAM to deliver the service outputs required within our new operating environment as efficiently as possible.⁸
- **Treatment costs** — Increasing treatment costs are primarily driven by older RO membranes and the resulting need for increased chemical dosing to meet drinking water quality requirements. We are also forecasting an increase in the cost of chemicals above the increase in CPI.
- **Energy costs** — Higher energy costs, reflecting an older average membrane age which increases electricity consumption/volumes.
- **Other fixed O&M** — The increase in other fixed O&M expenditure relates to the cost of SDP managing dial before you dig and developer enquiries regarding the pipeline, with technical and design resources to review, assess and approve any activities that have the potential to adversely affect the pipeline. These costs to date have been absorbed by SDP during the 2017-23 regulatory period at no cost to customers.

7 The benchmark price IPART assumed in setting prices for 2021-22 which has remained constant in nominal terms for 2022-23 given the delay in making a new Determination.

8 We note that ESCOSA approved an increase in maintenance costs for SA Water in relation to the aging Adelaide Desalination Plant (ADP). ADP is a similar age to our Plant. See ESCOSA, SA Water Regulatory Determination 2020: Statement of Reasons, p 165.

- **Cyber security** — The cyber security risk landscape has been developing over the 2017-23 regulatory period with an increased prevalence of cyber-attacks against critical infrastructure businesses and changes to the Security of Critical Infrastructure Act 2021 (SOCI Act), which applies to SDP. SDP engaged independent cyber-security experts at NCC Group and McGrath Nicol, to provide advice on SDP's current level of cyber maturity and to recommend changes as appropriate.
- **Insurance costs** — The cost of insurance continues to rise due to worsening natural disaster risks driven by climate change and losses across the global insurance market. We engaged insurance expert AON to undertake a risk profiling and gap analysis to identify any gaps in how key risks are managed using insurance, as well as to quantify the insurable risks attached to the operation of the Plant. Based on AON's advice, we are proposing changes to efficiently manage these risks in the long-term interests of customers. The increased operation of the Plant has also led to an increase in insurance costs.
- **Corporate labour costs and professional services** — We have identified additional corporate roles and the costs of professional services that are required to manage the oversight of the Plant efficiently, especially in relation to its increased operation. In our view, properly resourcing these needs will improve our risk management and financial processes.
- **Land tax and council rates** — Land tax is calculated by Revenue NSW, and council rates are determined by Sutherland Shire Council, based on a land valuation provided by the NSW Valuer General. We engaged a global commercial real estate expert, to forecast our land tax and council rates for the 2023-27 regulatory period. We have included our best estimate of these costs in our forecast operating expenditure.

As already noted, we are also proposing adjustments to account for any difference between our forecast and actual costs for factors that are outside our control. Under this mechanism, SDP has designed a process to allow both SDP and IPART to monitor movements in electricity costs (such as ancillary service charges, market fees and energy losses), land tax and council rates, and insurance.

Our operating expenditure plans reflect the efficient costs of operation based on our experience and the latest market information

Most of our costs vary depending on our operating mode and the amount of water we produce. Energy cost is an important component of our operating expenditure, which also varies according to our water production. The table below provides our best estimates of our operating expenditure for the different levels of production, including the operating expenditure for our pipeline. Our forecasts also include an efficiency saving of 0.3% per annum from 2024-25 onwards, which allows time for SDP to adjust to our new operating environment.

Table 1: Forecast operating expenditure for the 2023-27 regulatory period (\$2022-23, \$million)

	2023-24	2024-25	2025-26	2026-27	Total
Operational Mode — Minimum Production	58	58	63	60	239
Operational Mode — Maximum Production	111	111	116	113	452

Source: Sydney Desalination Plant, totals may not add due to rounding.

3.3 Capital expenditure

Our capital expenditure plans are focused on ensuring that the Plant operates reliably and efficiently for the duration of its design life. During the 2017-23 regulatory period, our actual total capital expenditure is expected to be \$56.0 million. For the first 5 years of the 2017-23 regulatory period, capital expenditure was lower than the IPART allowance due to:

- refurbishments undertaken using insurance proceeds as part of the Plant rebuild project following the storm event. This was undertaken at no additional cost to customers as the rebuild of the Plant was funded by SDP's insurers; and
- SDP's decision to delay forecast capital projects, particularly given many assets had recently been refurbished as part of the Plant rebuild project.

These savings will be passed on to customers in the 2023-27 regulatory period because our regulatory asset base will be lower than would otherwise be the case. This is a good outcome for customers.

In the 2023-27 regulatory period, the Plant is reaching an age where both 'full overhaul' capital expenditure is required on electrical systems and mechanical assets are due for major refurbishments to ensure it remains in good operational readiness and assets reach their design lives. As such, our plans reflect a standard profile of capital expenditure for a desalination plant, which ensures that the Plant delivers water reliably to customers.

Our capital expenditure plans include a shift to a long-term, continuous replacement program for RO membranes (the key drinking water treatment process asset to reject salt from seawater). This program balances the cost of capital expenditure with the cost of deteriorating energy efficiency as membranes age and is also a prudent and efficient approach to managing procurement risks over the long-term.

Our capital expenditure plans also include an allowance for an additional Drinking Water Pump Station pump and connection of a second 132kV electrical feeder cable. The addition of a new Drinking Water Pump Station pump will provide additional reliability, which is a potential weak point in the Plant's production and supply process due to the lack of redundancy. The addition of a second 132kV electrical feeder cable provides a backup electrical supply that will enable the Plant to continue to produce water in the event of a power outage on the existing electrical feeder cable.

Both of these projects are particularly important and necessary under SDP's new Network Operator's Licence which require SDP to be operating continuously. We regard this investment as prudent and efficient, given the need for SDP to operate more dynamically under the new operating environment.

Our capital expenditure plans will ensure the longevity and performance of the Plant, while providing better protection against the risk of asset failure that could affect reliable water production

While we are planning an increase in capital expenditure compared to the 2017-23 regulatory period, our proposed total capital expenditure of \$81 million over the four-year period is very modest in terms of its impact on water customer bills (approximately 0.1%), and in the broader context of water sector investment. For example, recent IPART decisions have provided capital expenditure allowances of \$373 million for WaterNSW⁹; \$652 million for Hunter Water¹⁰; and \$4.6 billion for Sydney Water.¹¹

9 \$373m (\$19-20) of capital expenditure for 2020-24. IPART, Review of prices for Water NSW (Greater Sydney): From 1 July 2020 — Final Report, June 2020, p 38.

10 \$652m (\$19-20) of base capital expenditure for 2020-24. IPART, Review of prices for Hunter Water Corporation: From 1 July 2020 — Final Report, June 2020, p 52.

11 \$4.6 billion (\$19-20) of base capital expenditure (capex) for 2020-2024. This is 10% lower than Sydney Water's proposal, but 41% higher compared to capex over 2016-2020. IPART, Review of prices for Sydney Water: From 1 July 2020 — Final Report, June 2020, p 5.



Our capital expenditure forecasts also incorporate an annual efficiency factor of 0.3% to ensure that downward pressure is maintained on costs.

Table 2: Forecast capital expenditure for the 2023-27 regulatory period (\$2022-23, \$million)

	2023-24	2024-25	2025-26	2026-27	Total
Membranes	8	10	9	8	36
Plant	6	3	3	3	15
Periodic maintenance	7	6	6	5	23
Other	3	3	0	0	7
Total	24	22	18	16	81

Source: SDP, totals may not add due to rounding.

3.4 Financing requirements

In addition to presenting our expenditure plans, our pricing submission must address several other important inputs that determine our total revenue requirements for the 2023-27 regulatory period. These elements, which we refer to as ‘financing requirements’, include:

- Return on assets, which covers interest costs on our loans and a fair return to equity investors (collectively the weighted average cost of capital (WACC));
- Return of assets or depreciation, which recovers the initial cost of our assets — the return of asset costs each year depends on the value of our regulated assets and the period over which they provide services (their economic life); and
- An allowance for tax, which reflects a benchmark allowance for the tax we are required to pay.

For the 2023-27 regulatory period, the key points to note are:

- The return on assets is based on capital market data. For the 2023-27 regulatory period, our estimated post-tax real WACC is 3.6%, which is lower than the 2017-23 regulatory period. Our approach to calculating WACC is consistent with IPART’s 2018 WACC guideline.
- In relation to depreciation, a key issue affecting the economic lives of the assets is the uncertainty regarding long-term demand for SDP’s services beyond the term of SDP’s current lease, which expires in 2062. SDP’s proposal is that the asset life assumption for its pipeline infrastructure should be reduced from the current 120 year assumption to 100 years consistent with its design life.
- If evidence becomes available in future periods that the economic life of SDP’s assets is likely to be lower than their design life, then IPART should (in future periods) consider revising its asset life assumptions in line with the expected economic life.
- We are also proposing that the asset life for membranes align to the future prudent and efficient membrane replacement strategy, as well as a weighted average life for periodic maintenance reflective of the life of assets within that expenditure category.

In addition to these financing requirements, IPART conducts a financeability assessment of SDP’s regulated business activities. Financeability means that a company is of a minimum credit rating which allows it to finance its operation at an efficient cost. A financeability assessment is a key element of the regulatory framework because it provides an important check on the individual regulatory decisions to ensure that, as a whole, IPART’s determination enables businesses to maintain a minimum credit rating while running their regulated activities, in SDP’s case to operate the Plant.

SDP proposes to work constructively with IPART on the financing requirements proposed in our pricing submission, including IPART’s financeability assessment. Further details on these technical aspects of our proposal are provided in our pricing submission.

Our financing requirements reflect IPART’s framework and we will work constructively with IPART on these technical aspects of our pricing submission

4. What does our pricing submission mean for customers?

4.1 Stable prices and greater resilience

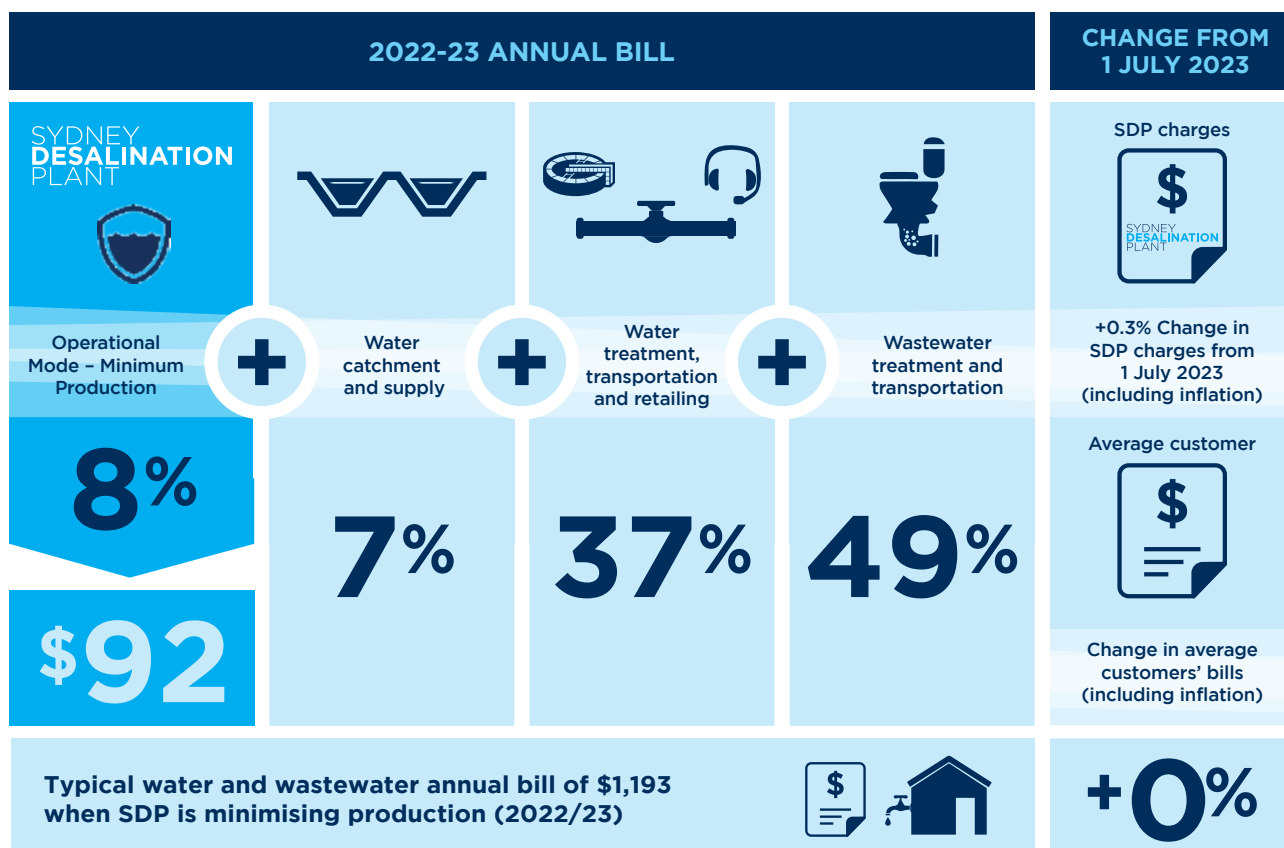
Our vision for the 2023-27 regulatory period will enable us to play an even more effective role in addressing the increasing water security challenges facing greater Sydney. By working more closely with Sydney Water, supported by a more flexible and effective regulatory framework, we will be able to contribute to better customer outcomes. More immediately, however, our submission for the 2023-27 regulatory period includes targeted investments to maintain our service levels.

We have followed our strong governance process for asset management to ensure that our work programs are planned, managed and delivered prudently and efficiently for the long-term benefit of our customers. Maintaining the condition of SDP's assets to respond to the level of service requirements expected is critically important to customers' long-term interests. At the same time, our pricing submission enables us to adapt our services to our changing operating environment.

In developing our pricing submission, we have given particular attention to the potential to deliver better outcomes for Sydney Water and water customers. Lower financing costs have enabled us to keep prices stable, while providing a more valuable, integrated water resilience service to Sydney Water.

We recognise the importance of keeping prices as low as possible, while improving the service we provide

Our proposed prices will result in stable customer bills in 2023-24



We have assessed our revenue requirements for the Plant and pipeline over the 2023-27 regulatory period to allow us to provide water supply and water security services in accordance with our new Network Operator's Licence. Our revenue ensures that we can optimise the performance of the Plant over its expected life by operating and maintaining our assets efficiently and investing in new assets when required. The revenue also allows us to earn a reasonable return on our investment, so that we can continue to finance our operations.

The tables below show our revenue requirements under maximum and minimum production. The data for 2022-23 is provided for comparison purposes.

Table 3: Minimum Production revenue requirement (\$2022-23, \$million)

	2022-23	2023-24	2024-25	2025-26	2026-27	Total 2023-27
Total revenue (\$m)	207	202	205	212	212	831
Percentage change %		-2.5%	1.4%	3.4%	-0.2%	

Source: SDP calculations

Table 4: Maximum Production revenue requirement (\$2022-23, \$million)

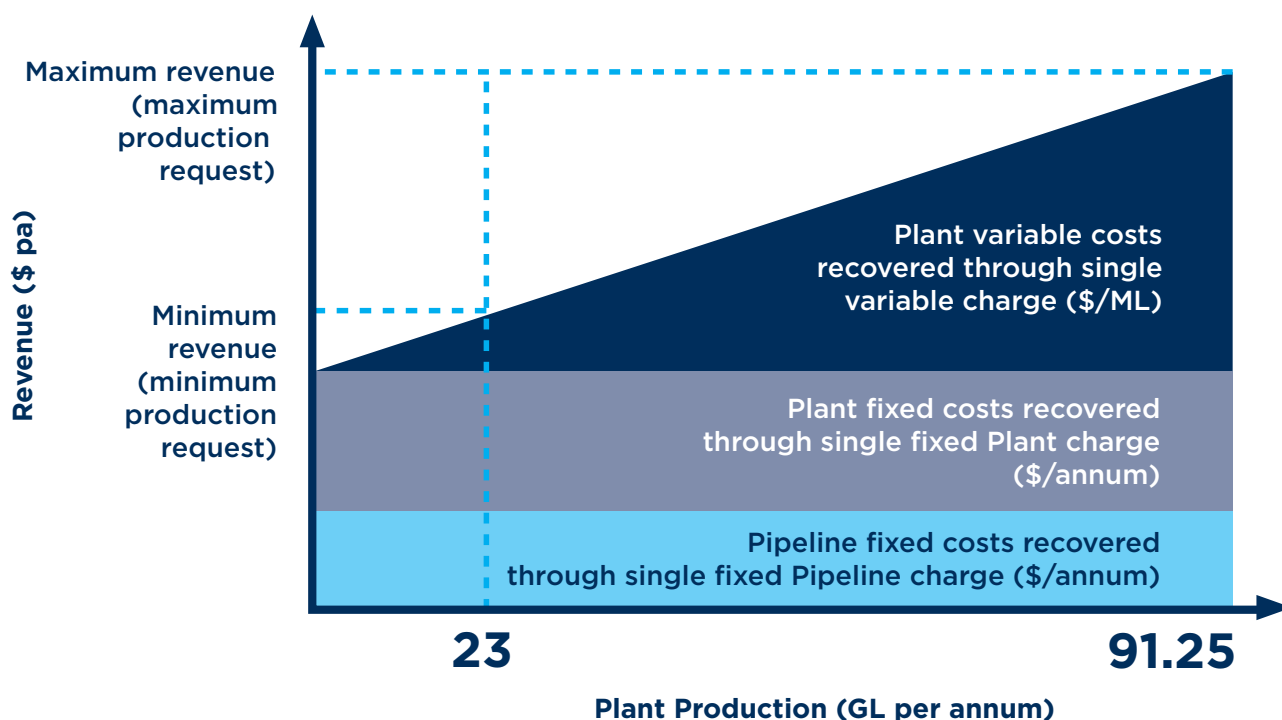
	2022-23	2023-24	2024-25	2025-26	2026-27	Total 2023-27
Total revenue (\$m)	253	255	258	266	265	1,044
Percentage change %		1.0%	1.0%	2.9%	-0.2%	

Source: SDP calculations

Our revenues will adjust with water production, so that our costs and revenues remain in balance

Our actual revenue is likely to be somewhere between the amounts shown in the tables above, as our production will probably sit between the minimum and the maximum amount. We are proposing a charging method that has fixed and variable components that will ensure that our revenue changes as our water production varies, as depicted in the figure below. This charging structure will keep our revenues and costs in balance with one another, as water production varies from year to year.

Our proposed charging structure will adjust revenues with water production



4.2 A more reliable and flexible service

Our role is to work with Sydney Water, to manage growing water security risks associated with more frequent and intensive climate change-related weather events. In managing this uncertainty, we need to be flexible in how we operate so that we can adapt to changing circumstances as quickly and efficiently as possible.

The introduction of negotiated services will provide for a flexible service that is more responsive to the needs of Sydney Water and the long-term interests of customers. The proposed changes in the regulatory framework will support these changes by making sure our incentives are better aligned with customers' interests.

In addition to improved flexibility, we are focused on ensuring the reliability and resilience of the services we provide. This is essential under our new Network Operator's Licence, under which we will operate as a continuously available water resilience asset and we will respond quickly to unexpected events such as unforeseen water quality emergencies. In this regard, our expenditure plans will ensure that our Plant and the services we provide are:

- resourced and ready to respond in flexible full-time operation
- less exposed to the risk of asset failure, including electricity infrastructure, that could otherwise threaten the availability of water production;
- protected against the risk of damage and loss through appropriate insurance coverage; and
- secure against the risk of cyber threats.

Our pricing submission will secure more reliable and flexible water supply from our Plant

4.3 Improved risk allocation and accountability

Our recent operational experience has highlighted the uncertainties and risks that affect the demand for our services and the costs of providing them. For example, we cannot predict the likelihood of drought conditions returning during the 2023-27 regulatory period or the number and duration of water security events, such as a bushfire or flood.

The nature and frequency of these events will affect our output and costs, as we procure more or less electricity to deliver the required level of output. Our costs are also affected by factors that are beyond our control, such as the fees and charges levied by the Australian Energy Market Operator that relate to the operation of the electricity system. In the 2023-27 regulatory period, we are proposing a better allocation of these risks between SDP and customers to avoid windfall gains or losses.

Our view is that the proposed improvements in risk allocation will provide long-term benefits to customers, as SDP's management effort will be able to focus on those risks and service performance issues within its control. Over time, we would expect this reallocation of risk to deliver customer benefits as management delivers service and cost performance improvements.

We welcome accountability for those things in our control and seek to avoid exposure to windfall gains and losses. Our proposed changes will enable us to focus our efforts on delivering better outcomes for water customers

We want to work with IPART and our other stakeholders to develop a more efficient approach to risk sharing and accountability.



5. What happens next

We want to hear your feedback as we work with IPART to finalise our plans and revenue requirements

IPART will commence its review of our submission and make its draft decision in early 2023. We will make a further submission in response to IPART's draft decision. A final decision from IPART will be published in June 2023, so that our new prices can apply from 1 July 2023.

Customers and interested stakeholders can make submissions to IPART directly. Details of IPART's consultation process are provided on its website: <https://www.ipart.nsw.gov.au/>

In addition to making submissions directly to IPART, we would welcome any feedback or questions on this document.

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