IPART
New South Wales

Independent Pricing and Regulatory Tribunal

# Review of the Operating Licence and review of prices for the Sydney Catchment Authority

From 1 July 2012

**Water — Issues Paper**
June 2011

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# Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

**The submission from the Sydney Catchment Authority is due by 16 September 2011.**

**Submissions are due by 14 October 2011.**

We would prefer to receive them by email <ipart@ipart.nsw.gov.au>.

You can also send comments by fax to (02) 9290 2061, or by mail to:

End of Term review of SCA's Operating Licence and Prices
Independent Pricing and Regulatory Tribunal
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Our normal practice is to make submissions publicly available on our website <www.ipart.nsw.gov.au>. If you wish to view copies of submissions but do not have access to the website, you can make alternative arrangements by telephoning one of the staff members listed on the previous page.

We may choose not to publish a submission—for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. IPART will then make every effort to protect that information, but it could be subject to appeal under freedom of information legislation.

If you would like further information on making a submission, IPART's submission policy is available on our website.

# Contents

# 1 Introduction

The Independent Pricing and Regulatory Tribunal of NSW (IPART) is responsible for:

- Reviewing and making recommendations to Government for the granting of operating licences for metropolitan water agencies' monopoly water and wastewater services. These include services provided by Sydney Catchment Authority (SCA), Sydney Water Corporation (Sydney Water), Hunter Water Corporation (Hunter Water) and State Water Corporation (State Water). We also have a monitoring and compliance role once the licences are granted.
- Setting the maximum prices that may be charged by metropolitan water agencies for monopoly water and wastewater services. These include services provided by SCA, Sydney Water, Hunter Water and State Water, as well as Gosford City Council and Wyong Shire Council.

IPART regulates and makes recommendations to Government on the granting, amendment or cancellation of SCA's operating licence. The current SCA operating licence started on 8 April 2011 and expires on 30 June 2012 (a 15-month licence term). We intend to revise SCA's operating licence to adopt a more risk-based, process-driven approach to achieve the outcomes outlined in the legislation. We adopted a similar approach for Sydney Water's new licence granted last year, and Hunter Water's end-of-term licence review, which is currently underway. Greater consistency in licensing between all the metropolitan utilities is also an objective of this review. In making recommendations on changes to the licence, we will conduct a cost-benefit analysis to ensure the benefits of any changes outweigh the costs. If the benefits do outweigh the costs, those efficient costs will be included within SCA's cost base to be recovered from prices.

IPART regulates SCA's charges for the provision of water to Sydney Water and other smaller customers. In 2009, we made a determination of the maximum charges to apply to SCA's water services (2009 Determination).[1] The 2009 Determination applies from 1 July 2009 to 30 June 2012 (current determination period). In reviewing prices, IPART will determine SCA's maximum charges for the period commencing 1 July 2012 (upcoming determination period). In doing so, we will consider SCA's catchment management and water provision functions, and the appropriate level of revenue needed to support these activities in an efficient and effective manner. This

1 IPART, *Review of prices for the Sydney Catchment Authority – Determination and Final Report*, June 2009.

includes considering the outcomes of proposed licence changes from the review of the operating licence and its impacts on SCA's service provision costs.

## 1.1 A combined approach to licensing and pricing

In the past, IPART has not had the opportunity to consider operating licence requirements in combination with pricing implications, and vice-versa. Due to the timing of these reviews, we now have the opportunity to bring together our end-of-term review of the 2006–2011 and 2011–2012 operating licences and the determination of 2012 prices, as the projects will be run concurrently. We recognise that integration of the pricing and licence review requires careful coordination of 2, somewhat different, approaches.

### 1.1.1 The licence review

For the licence review, we propose to use the same approach as recent metropolitan water operating licence reviews. In our last review of the Hunter Water operating licence, we established a set of principles for best practice regulation[2] based on principles advocated in our 2006 report on regulation.[3] The principles to be applied to the review are as follows:

1. **The need for action should be established.** The need to regulate an issue through the licence should be justified. The licence conditions should be directed at regulating issues that cannot be more efficiently or effectively addressed by the market, by individuals acting without government involvement, or by other available alternatives.
2. **The objectives of the licence should be clear.** The objectives must be clearly articulated. The licence obligations need to directly target these objectives and, where possible, be measurable. The obligations must also be consistent with existing government objectives and policies.
3. **The impact of the licence should be properly understood by considering the costs and benefits of a range of options, including non-regulatory options.** Licence requirements should provide a net benefit to society. They should not impose unnecessary administrative or compliance costs, and should avoid perverse outcomes.

2 IPART, *Review of the Operating licence for Hunter Water Corporation – Issues Paper*, September 2006.
3 IPART, *Investigation into the burden of regulation in NSW and improving regulatory efficiency – Final Report*, October 2006.

4. **The licence should be effective and proportional.** It should achieve its objectives without imposing unnecessary costs. The licence obligations or scope of regulation should be proportionate to the seriousness of the issue being dealt with and represent good regulatory practice. Licence obligations can prescribe specific actions, identify particular standards or frameworks to be followed, or require specified outcomes. While prescribing action can provide certainty in compliance, the licence should, where possible, stipulate performance goals or outcomes that encourage cost-effective compliance.
5. **Consultation with the regulated utility and the community should inform the licence review.** Consultation should be applied at all relevant stages in the licence review.
6. **Simplification, minimisation of regulatory overlap and avoidance of regulatory inconsistency should be considered**. As far as possible, the licence should avoid inconsistency with or duplication of other regulatory requirements, particularly in relation to the collection and reporting of environmental and other performance indicators. Inconsistencies or overlap can waste resources, create confusion and reduce the regulated utility's level of accountability.
7. **The licence should be enforceable and reviewed periodically to ensure continued efficiency and effectiveness.** Audits are the primary means of assessing compliance with the licence. Performance measures or requirements in the licence should be readily verifiable, as well as measurable and auditable. The licence, and particular aspects of the licence, should include a periodic review clause(s) to ensure continued efficiency and effectiveness.

### 1.1.2 The price review

For the price review, we propose the same building block approach that has been used in past metropolitan water price reviews. This involves setting a maximum price for the services provided by SCA. In general this process involves:

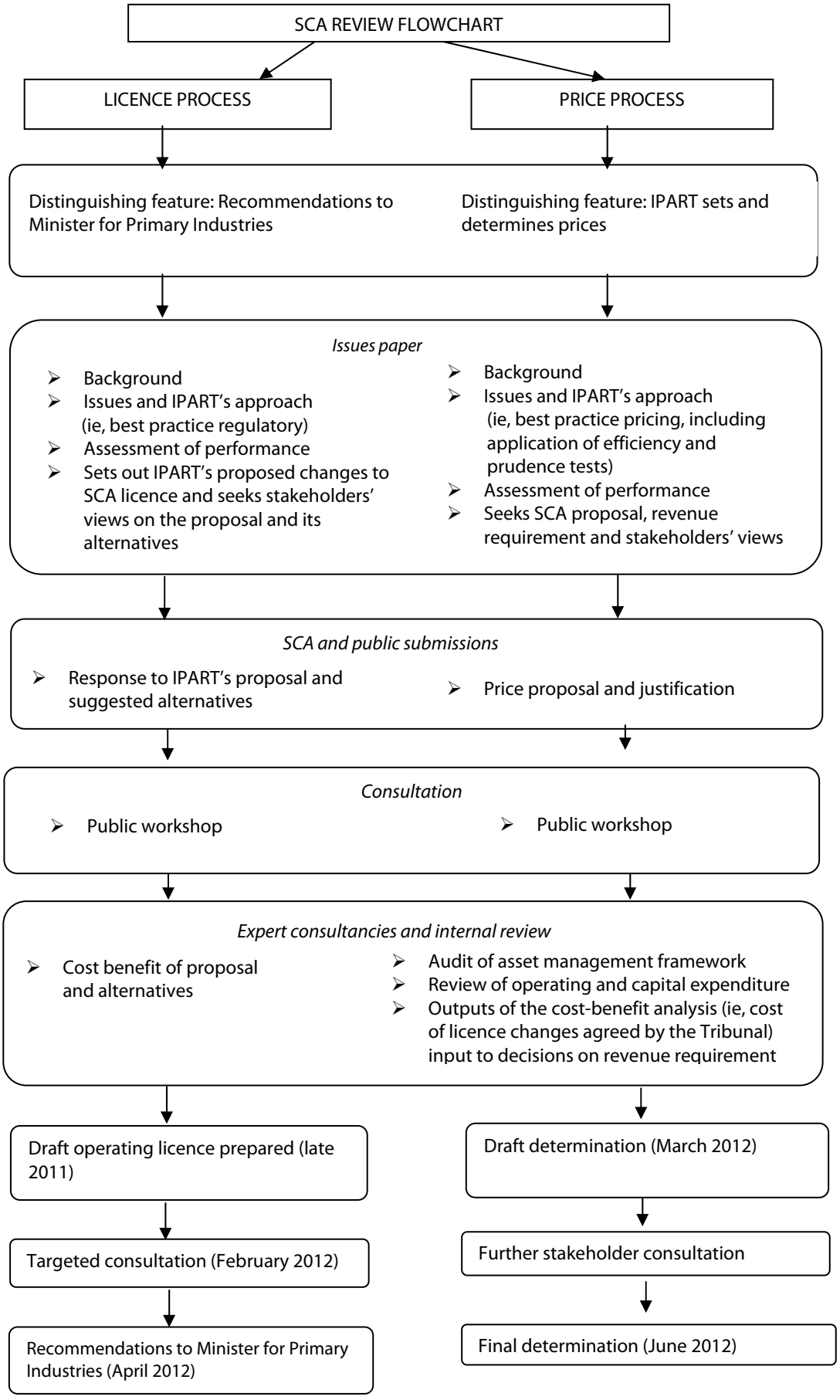
- Determining the **revenue requirement** for each service, based on an assessment of efficient and prudent operating and capital expenditures. This assessment will be informed by expert external assessment of expenditure.
- Setting **prices** to recover the efficient costs, with consideration given to the principles of economic efficiency in establishing volumetric charges and the impacts of price movements on SCA's customers (and end users).

### 1.1.3 Integration of the operating licence review with the price review

The operating licence review involves releasing an issues paper that documents IPART's proposed changes to the licence and seeks comments. After a public workshop, and careful consideration of SCA's submission and alternative viewpoints and cost-benefit analysis, we arrive at draft recommendations on changes to the operating licence. This is then subjected to more targeted consultation, before a new licence is recommended to the Minister for Primary Industries.

In contrast, the price review involves the release of an issues paper, a public workshop, and careful consideration of SCA's proposal and other stakeholders' submissions and alternative viewpoints, before deciding on a draft determination that is then released for comment. Following assessment of stakeholders' comments, a final determination is made.

The proposed plan for integration recognises these differences, but seeks to connect the processes wherever possible to reduce duplication and enhance stakeholders' consultation. This process is best illustrated diagrammatically (see chart below).


SCA REVIEW FLOWCHART
LICENCE PROCESS
PRICE PROCESS
Distinguishing feature: Recommendations to Minister for Primary Industries
Distinguishing feature: IPART sets and determines prices
Issues paper
Background
Issues and IPART's approach (ie, best practice regulatory)
Assessment of performance
Sets out IPART's proposed changes to SCA licence and seeks stakeholders' views on the proposal and its alternatives
Background
Issues and IPART's approach (ie, best practice pricing, including application of efficiency and prudence tests)
Assessment of performance
Seeks SCA proposal, revenue requirement and stakeholders' views
SCA and public submissions
Response to IPART's proposal and suggested alternatives
Price proposal and justification
Consultation
Public workshop
Public workshop
Expert consultancies and internal review
Cost benefit of proposal and alternatives
Audit of asset management framework
Review of operating and capital expenditure
Outputs of the cost-benefit analysis (ie, cost of licence changes agreed by the Tribunal) input to decisions on revenue requirement
Draft operating licence prepared (late 2011)
Targeted consultation (February 2012)
Recommendations to Minister for Primary Industries (April 2012)
Draft determination (March 2012)
Further stakeholder consultation
Final determination (June 2012)

The chart shows that the reviews will be conducted as follows:

- a joint issues paper is released, addressing issues relevant to both the price and licence reviews (this document)
- the SCA and stakeholders are invited to make a combined submission to both reviews
- a common consultancy is commissioned by IPART that investigates the efficient levels of operating and capital expenditure and asset management, and tests and sources information to enter into our cost-benefit analysis of the licence changes
- a single joint public workshop
- to the extent possible, we will integrate our analysis as it relates to SCA's performance and revenue.

There is less opportunity to coordinate the approach in the analysis stage of both reviews, after the public consultation. This is because, after the initial public consultation, the 2 processes have different milestones, as well as different analytical and ministerial consultation approaches. While we intend to continue consultation between the 2 reviews in the analysis stage, there will not be a formal coordination process.

## 1.2 Historical compliance performance[4]

In recent years, SCA has performed well across its licence and full compliance has been awarded historically in most aspects. However, in recent operating audits some areas have been identified where performance could be enhanced, and the auditors have made some recommendations. The areas identified include:

- specific parts of water quality monitoring, such as sampling frequencies and locations, as well as monitoring all identified parameters
- water quality data management, such as information on quality assurance processes
- some aspects of catchment management relating to lack of sufficient detail for assessment and implementation.

SCA has accepted these recommendations and has taken action (or is in the process of taking action) to address them.

4 See Operational Audit of Sydney Catchment Authority 2008/09 and 2009/10.

## 1.3 The 2009 Price Determination

The 2009 Determination, which applies for the period from 1 July 2009 to 30 June 2012, sets SCA's prices to generate total revenue over the period of $605m (in 2010/11 dollars[5]). This reflected our assessment of SCA's efficient costs of supplying water services to Sydney Water and its other customers. This meant that prices increased by 17.4% above inflation (real increase) over the determination period. The largest increase in bills was in 2009/10; prices then increased steadily to 2011/12.

The 2009 Determination indicated that these pricing decisions will allow SCA to deliver the following outcomes:

- Fund SCA's contribution to the upgrade of sewerage treatment plants within Sydney's drinking water catchment, which is required to protect water quality.
- Upgrade and refurbish dams to provide for environmental flows and comply with dam safety requirements.
- Upgrade and replace other infrastructure, such as electrical wiring, fencing, roads, bridges and support assets, to enable SCA to effectively carry out its catchment management and water-supply functions.
- Maintain SCA's financial viability.

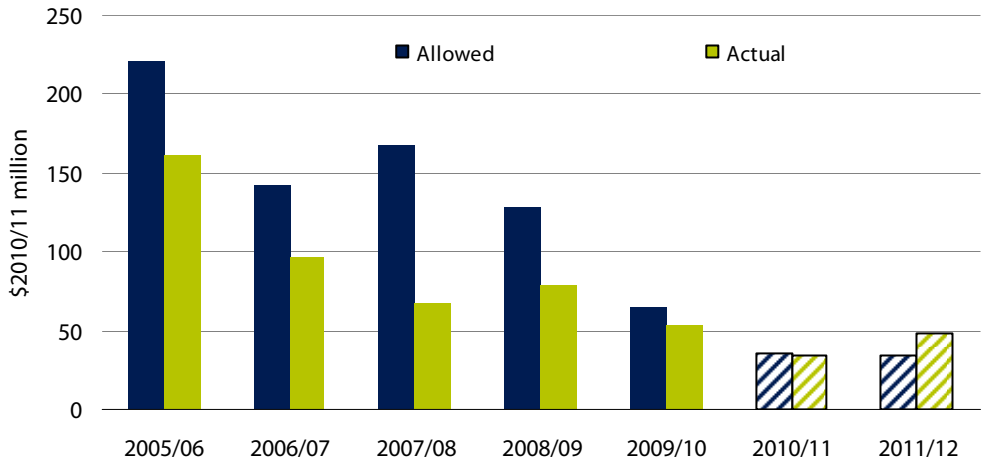
### SCA's actual costs since the 2009 Determination

The figures below compare SCA's actual (or forecast) capital and operating expenditure against costs we used to determine SCA's prices for the 2009 Determination (2009/10 to 2011/12). They show that operating expenditure aligned with forecasts, but there is considerable discrepancy in terms of capital expenditure.

Figure 1.1 shows that in relation to the amounts we allowed for capital expenditure in the 2009 Determination, SCA underspent in 2009/10. It forecasts that its capital expenditure in 2010/11 will match the amount allowed in the determination. There will be some overspending in 2011/12. Before 2009/10, SCA underspent on capital expenditure; and this pattern is especially pronounced for 2007/08 and 2008/09 where actual capital expenditure was approximately half of the allowed amount. This underspend was largely due to a government decision to not proceed with a major capital works project to increase Shoalhaven Transfers.

5 IPART, *Review of prices for the Sydney Catchment Authority from 1 July 2009 to 30 June 2012 – Determination and Final Report,* June 2009, p 47 inflated to $2010/11.

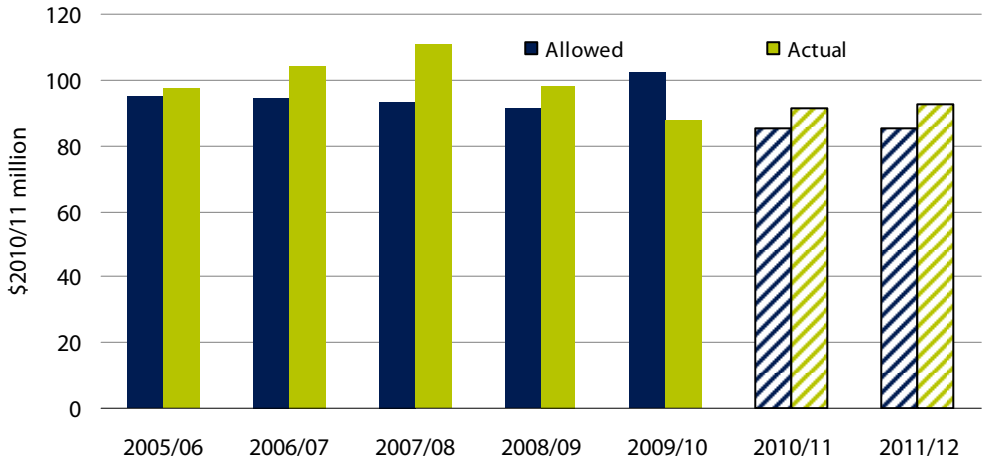
**Figure 1.1 Sydney Catchment Authority capital expenditure ($2010/11, million)**




**Note:** Actual figures for 2010/11 and 2011/12 are projections from SCA.
**Data source:** SCA 2009 Price Determination and SCA AIR 2009/10.

Figure 1.2 shows that in relation to the amounts we factored into operating expenditure prices in the 2009 Determination, SCA's actual costs are close to those forecast. While SCA has underspent in 2009/10, it is forecast to overspend in 2010/11 and 2011/12, so that over the determination period SCA's actual operating expenditure aligns with the forecast operating expenditure. Before 2009/10, there was some degree of overspending for each year from 2005/06 to 2008/09.

**Figure 1.2 Sydney Catchment Authority operating expenditure ($2010/11, million)**




**Note:** Actual figures for 2010/11 and 2011/12 are projections from SCA.
**Data source:** SCA 2009 Price Determination and SCA AIR 2009/10.

For this review, we will be seeking a reconciliation from SCA of its actual costs over the 2009 Determination period, against costs allowed by IPART when it set prices in the 2009 Determination, and an explanation of the variances.

## 1.4 Scope of the reviews

### 1.4.1 The licence review

One of IPART's regulatory functions is to review and amend SCA's operating licence and make recommendations to the relevant Minister.[6] The current operating licence requires that we engage in public consultation and report to the relevant Minister on the findings of the review and any recommendations for amendment to the operating licence. The Minister may accept, reject or amend our recommendations, before endorsing a new operating licence for approval by the Governor and subsequent gazettal.

SCA's current licence requires that a review be undertaken to determine the terms of any renewal of the licence.[7]

In this licence review, we intend to review:

- the regulatory approach adopted in the licence to align it with approaches used for other public and private water utilities (Chapter 3)
- specific licensing issues for SCA, which were raised in the last review and deferred to this review (Chapter 4).

### 1.4.2 The price review

This review will be conducted under section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act). Under section 15 of the IPART Act, IPART is to regard the following matters (in addition to any other matters the Tribunal considers relevant) in making a determination:

- the **cost** of providing the services
- the **protection of consumers** from abuses of monopoly power in terms of prices, pricing policies and standard of services
- the **appropriate rate of return** on public sector assets, including appropriate payment of dividends
- the effect on general price inflation over the medium term
- the **need for greater efficiency** in supplying the services, reducing costs for the benefit of consumers and taxpayers

6 See *Sydney Water Catchment Management Act 1998*, section 30A and 31(4) and operating licence, clause 1.6.

7 Operating licence, clause 1.6.1.

- the **need to protect the environment by maintaining ecologically sustainable development** through appropriate pricing policies that take account of all the feasible options available
- the **impact on pricing policies of borrowing, capital and dividend requirements** of the government agency concerned and, in particular, the impact of any need to renew or increase relevant assets
- the **impact on pricing policies** of any arrangements into which the government agency concerned has entered involving the exercise of its functions by some other person or body
- the **need to promote competition** in the supply of the services
- **considerations of demand management** (including levels of demand) and least cost planning
- the **social impact** of IPART's determinations and recommendations
- the **quality, reliability and safety** of the services provided. [8]

In considering these matters, along with any other matters we consider relevant, IPART must balance the diverse needs and interests of stakeholders, such as customer affordability, environmental impact and maintenance of overall customer service quality, and ensure that SCA is adequately recompensed for the services it provides. IPART also takes into account principles issued by the Council of Australian Governments (COAG) and contained in the National Water Initiative.[9]

For this review, we will engage consultants to investigate SCA's capital and operating expenditure program to determine whether it is the most efficient way of meeting the community's requirement for catchment management and an adequate supply of water of an appropriate quality.

Issues that we will investigate in this review include:

- whether changes to SCA's operating environment have increased revenue risk
- how SCA's prices and price structures should be adjusted to deal with risks
- whether it is practical and appropriate to introduce scarcity pricing at a wholesale level
- how to respond to the size of SCA's forecast efficient capital works program and its impacts for customer affordability
- SCA's progress on developing a more robust system of charges for local government, raw water and unfiltered water customers, arising from the 2009 review

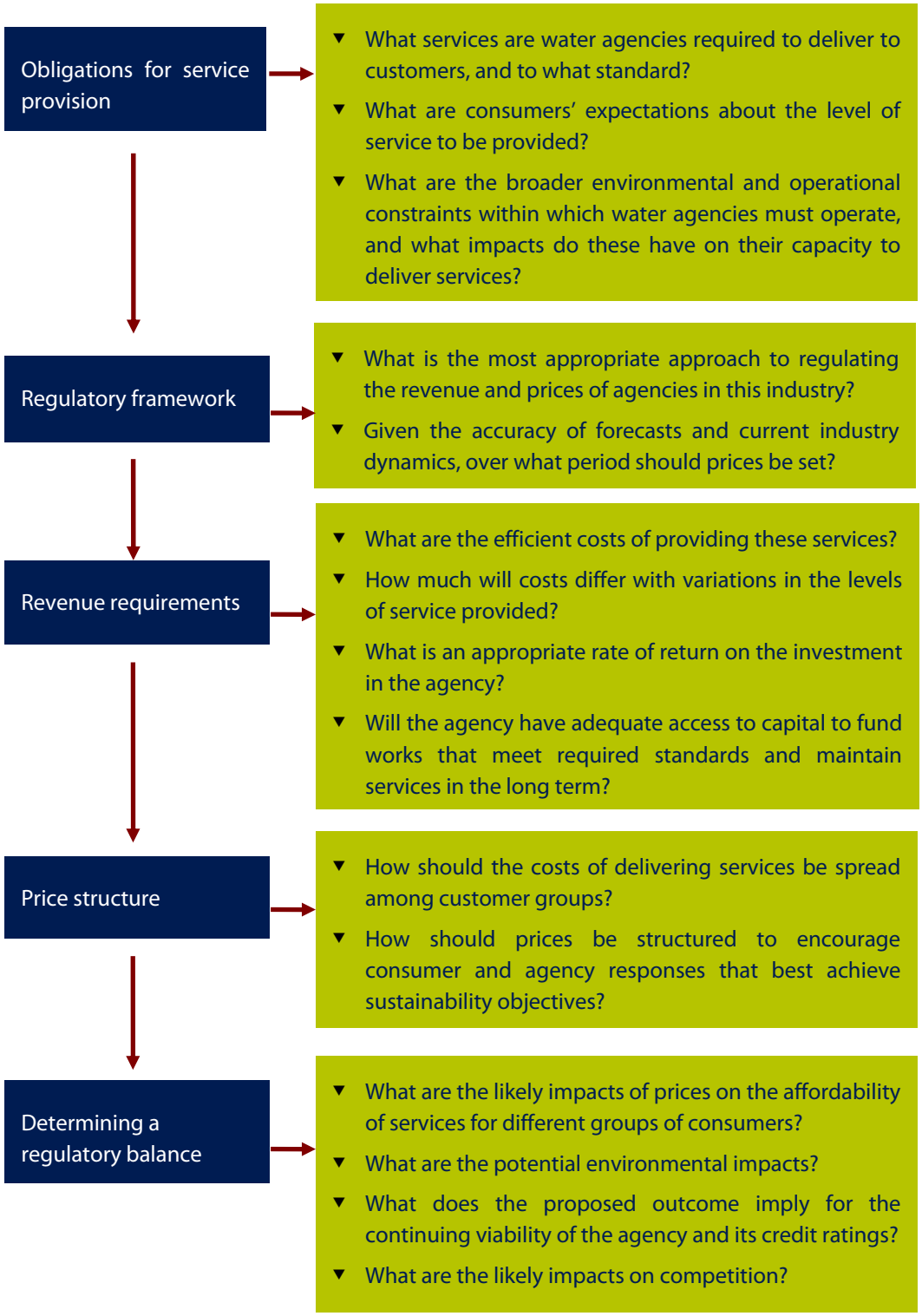
8 The section 15 requirements are listed in full in Appendix C.

9 The National Water Initiative has built on the principles established in the 1994 COAG Water Reform Framework.

- whether customers should bear the cost of non-commercial and heritage obligations that have been imposed by the Government.

Our general approach to determining monopoly prices for water agencies is outlined in Figure 1.3.

**Figure 1.3 IPART's price determination process**



## 1.5 The combined review processes

In undertaking this combined review, we will conduct our own research and analysis using selected consultant investigations and public consultation. This issues paper has been prepared to assist in identifying and understanding the key issues for the review and to elicit stakeholder comment.[10] We have developed some preliminary views in response to the licensing issues that are discussed in chapters 3 and 4 of this paper and these are provided in Appendix A. We have also developed some questions on pricing issues in chapters 2, 5 and 6 of this paper. A consolidated list of the questions is presented in Appendix B. However, stakeholders may raise and discuss any other issues that they consider relevant to the review.

With regard to the licence review, after the public workshop, careful consideration of SCA's submission and alternative viewpoints and a cost-benefit analysis, we will arrive at draft recommendations on changes to the operating licence. We will then undertake more targeted consultation, before recommending a new licence to the Minister for Primary Industries.

With regard to the pricing review, we will release a draft report and determination following this consultation, and invite comments from stakeholders. We will consider the comments received from stakeholders before making our final determination and publishing our final report.

An indicative review timetable is set out below.

**Table 1.1 Indicative review timetable**

| Task | Timeframe |
|---|---|
| Release issues paper, addressing both the price and licence review | 24 June 2011 |
| Receive submission from SCA | 16 September 2011 |
| Receive public submissions to both reviews | 14 October 2011 |
| Hold public workshops relating to both reviews | November 2011 |
| Finalise draft operating licence | February 2012 |
| Finalise cost-benefit analysis | February 2012 |
| Hold stakeholder briefings on draft licence | February 2012 |
| Release draft Price Determination | March 2012 |
| Receive submissions to the draft Price Determination | April 2012 |
| Final recommendations to Government on operating licence | April 2012 |
| Release final Price Determination | June 2012 |

**Note:** These dates are indicative and are subject to change.

[10] Details on how stakeholders can make submissions are given on the page preceding the Table of Contents.

### 1.5.1 Information requirements for the licence and price reviews

We have encountered difficulties completing our price reviews on time in the past because of delays in the provision of necessary information by regulated entities. Delays and the late provision of supplementary information can result in work being suspended or revised to take into account new information. Delays and new information not only add to our workload and that of our consultants, but also limit stakeholders' ability to participate and provide input into our processes and decisions.

To allow us to better manage delays in providing necessary and supplementary information to this review, we have established mechanisms that allow us to 'stop the clock' on price reviews if we do not receive necessary information from SCA on time. Under 'stop the clock' arrangements, a delay in receiving information would automatically extend the timetable by the length of the delay. In the event that we made a decision to 'stop the clock', we would announce that this is taking place and would publish a revised timetable on our website. If SCA provides new information, we would consider the need to 'reset the clock', reflecting the need to rework and reconsider matters.

To ensure that SCA is able to provide all the information that we require, we have undertaken a number of measures, and have been in close communication with SCA. We have written separate letters to SCA informing it of the upcoming operating licence and price reviews and our information requirements. In September 2010, we outlined in detail the pricing information that we require in SCA's submission. In March 2011, we provided information on the scope of licence issues we intend to address and our associated information requirements. This ensures that SCA has ample time to prepare its submission well in advance of this issues paper being released. SCA received advance notice in response to feedback from water agencies indicating that early notice of our requirements in an upcoming review would enable them to better prepare for the review.

This paper reiterates our information requirements (both throughout the paper and listed in Appendix B). We will attempt, as far as possible, to agree with SCA on the information it should provide for these reviews, and when it should be provided.

We are also interested in receiving SCA's response to the broader range of issues raised throughout this paper (and listed in Appendix B), in addition to its comments on other issues that are important to this review.

## 1.6 Purpose and structure of this issues paper

To assist stakeholders in making submissions, this paper explains how the review is to be undertaken, provides background information and outlines issues on which we particularly seek comments. This paper is structured as follows:

- Chapter 2 provides an overview of SCA's role and evolving regulatory framework.
- Chapter 3 outlines our proposed approaches to regulating SCA under the operating licence and the associated changes to the licence. It poses a number of questions for SCA and stakeholders to respond to.
- Chapter 4 provides an overview of specific licensing issues and our proposed changes to the licence associated with these issues. It also poses a number of questions for SCA and stakeholders to respond to.
- Chapter 5 outlines our price determination process.
- Chapter 6 provides an overview of the key issues for this price review and poses a number of questions for SCA and stakeholders to respond to.

### 1.6.1 Summary of licensing issues for stakeholder comment

To assist in identifying and understanding the key licensing issues for this review, we seek comment on many issues, which are explained and discussed in Chapters 3 and 4 of this paper. We have summarised the key areas that we seek comment on below and a detailed list of issues is contained in Appendix B.

In this review of SCA's licence, we are considering a number of changes. In proposing changes to the licence, we will be conducting a cost-benefit analysis. Therefore, we seek comment from stakeholders on the costs and benefits of our proposed changes to the licence, as well as on other areas of the licence which stakeholders consider should be reviewed. Our proposed main changes to the licence include:

- altering the structure of the licence to make it more flexible and risk based
- developing a reporting manual to simplify the instrument and reduce regulatory overlap
- addressing other specific licensing issues raised in previous reviews relating to water supply management, water quality monitoring, catchment health reporting, customer service and water conservation.

### 1.6.2 Summary of pricing issues for stakeholder comment

To assist in identifying and understanding the key pricing issues for this review, we seek comment on many issues, which are explained and discussed in Chapters 2, 5 and 6 of this paper. Some issues are directed at SCA while others are general issues for all stakeholders to comment on. We have summarised the key areas that we seek comment on below and a detailed list of issues is contained in Appendix B.

In this review of SCA's prices, we seek comment from stakeholders on the standard pricing parameters across the 2009 and 2012 Price Determinations, such as:

- operating expenditure, capital expenditure, asset management practices and plans and output measures
- forecast sales, operating and capital costs.

We are also considering whether SCA's operating environment has increased its exposure to revenue risks and whether adjustments should be made in this determination to address such risks.

# 2 SCA's role and evolving regulatory framework

SCA is a state government agency charged with ensuring its catchments are efficiently managed to optimise water quality, protect the environment and minimise risk to human health, as well as supply water to Sydney Water and other customers. While SCA supplies the majority of Sydney Water's water requirements, it is no longer the sole provider of water to Sydney Water due to changes in SCA's operating environment with the commissioning of the Sydney desalination plant and foreshadowed lease of Sydney Desalination Plant Pty Ltd to the private sector. As a consequence, the regulatory framework around the supply of water to Sydney Water is still evolving. At this point, there is insufficient competition in the provision of water to consider removing a requirement to regulate SCA. This regulation is aimed at achieving economic efficiency, as well as social and environmental objectives.

This chapter outlines SCA's role and functions, its evolving regulatory framework and our regulatory approach.

## 2.1 SCA's role

SCA was established in 1999 by the *Sydney Water Catchment Management Act 1998* (the Act), in response to a series of water-quality incidents in Sydney during the previous year. The Sydney Water Inquiry (McClellan Inquiry), which investigated these water-quality incidents, found that the catchments were seriously compromised by many possible sources of contamination, and that in relation to catchment management there were:

> …a large number of government and non-government agencies operating with fragmented responsibilities, potential overlaps and gaps. No one body is responsible for ensuring the catchment is managed to minimise contamination of the available waters.[11]

To correct these deficiencies, the McClellan Inquiry recommended the establishment of an independent agency:

> …tasked to protect the water quality in the Inner and Outer Catchments and given management responsibilities for the Inner Catchment and powers to oversight a new strong and strategic Regional Environmental Plan for the whole catchment.[12]

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11 Sydney Water Inquiry, *Third Report: Assessment of the contamination events and future directions for the management of the catchment*, October 1998, p 74.

12 Ibid, p 89.

SCA's purpose is to manage and protect the water catchment areas and infrastructure under its control, and to supply water of sufficient quality to Sydney Water and several smaller customers. Its statutory objectives are outlined in Box 2.1 below.

**Box 2.1 SCA's objectives under the *Sydney Water Catchment Management Act 1998*[a]**

- To ensure that the catchment areas and the catchment infrastructure works are managed and protected so as to promote water quality, the protection of public health and safety, and the protection of the environment.
- To ensure that water supplied by it complies with appropriate standards.
- Where its activities affect the environment, to conduct its operation in compliance with the principles of ecologically sustainable development contained in section 6(2) of the *Protection of the Environment Administration Act 1991*.
- To manage the SCA's catchment infrastructure works efficiently and economically and in accordance with sound commercial principles.

**a** Section 14(1).

### 2.1.1 SCA's customers

Once supplied with water, SCA's customers manage the water and distribute it to households, businesses and other users. SCA's water supply system is the source of drinking water for over 4m people – about 60% of NSW's population. Sydney Water currently uses about 99% of SCA's water supply. SCA's other customers include Wingecarribee Shire Council and Shoalhaven City Council, as well as about 65 smaller raw water and unfiltered[13] water retail customers who have direct off-takes from pipelines, canals and storages.

In addition, in November 2010, the then NSW Department of Planning[14] approved plans to build a pipeline from SCA's Wingecarribee Reservoir to Goulburn, to supply the Goulburn community with up to 7.5ML of water per day in times of drought[15]. The total cost of the 80km pipeline[16] is estimated to be $50m, with the NSW Government and the Federal Government's Water Fund each contributing $20m, and the Goulburn Mulwaree Council liable for the remaining $10m.[17] Construction of the pipeline began in March 2011 and is expected to be completed by June 2011.

13 Unfiltered water – is water that has been managed for quality, whether by chemical treatment or otherwise (eg, source selection), but not treated at a water filtration plant.

14 NSW Government, *Approval for $54 million water pipeline*, Media Release, 16 November 2010, available on the Major Project section of the Department of Planning website; www.planning.nsw.gov.au

15 http://www.highlandsourceproject.com.au/uploads/ufiles/Factsheets/Fact_Sheet_1_-_Introduction.pdf , accessed 21 June 2011.

16 Ibid.

17 http://www.highlandsourceproject.com.au/, accessed 22 June 2011.

In addition to these water customers, SCA is required to release water to the environment, in accordance with the conditions of its water management licence. From 1 July 2011 this will be in accordance with the Water Sharing Plan.

### 2.1.2 SCA's water supply system

SCA's water supply system has a total operating storage capacity of 2.6 million ML, and comprises a number of water storages and several water transfer conduits. SCA draws water from 5 primary catchments: Blue Mountains, Shoalhaven, Warragamba, Woronora and Upper Nepean. These catchments, and hence SCA's area of operations, cover around 16,000km$^2$.[18] This includes 3,700 km$^2$ of 'special areas', which comprise bushland surrounding SCA's storages.[19] Special areas act as a buffer zone by stopping potentially harmful substances from entering the storages through restricting or prohibiting public access.

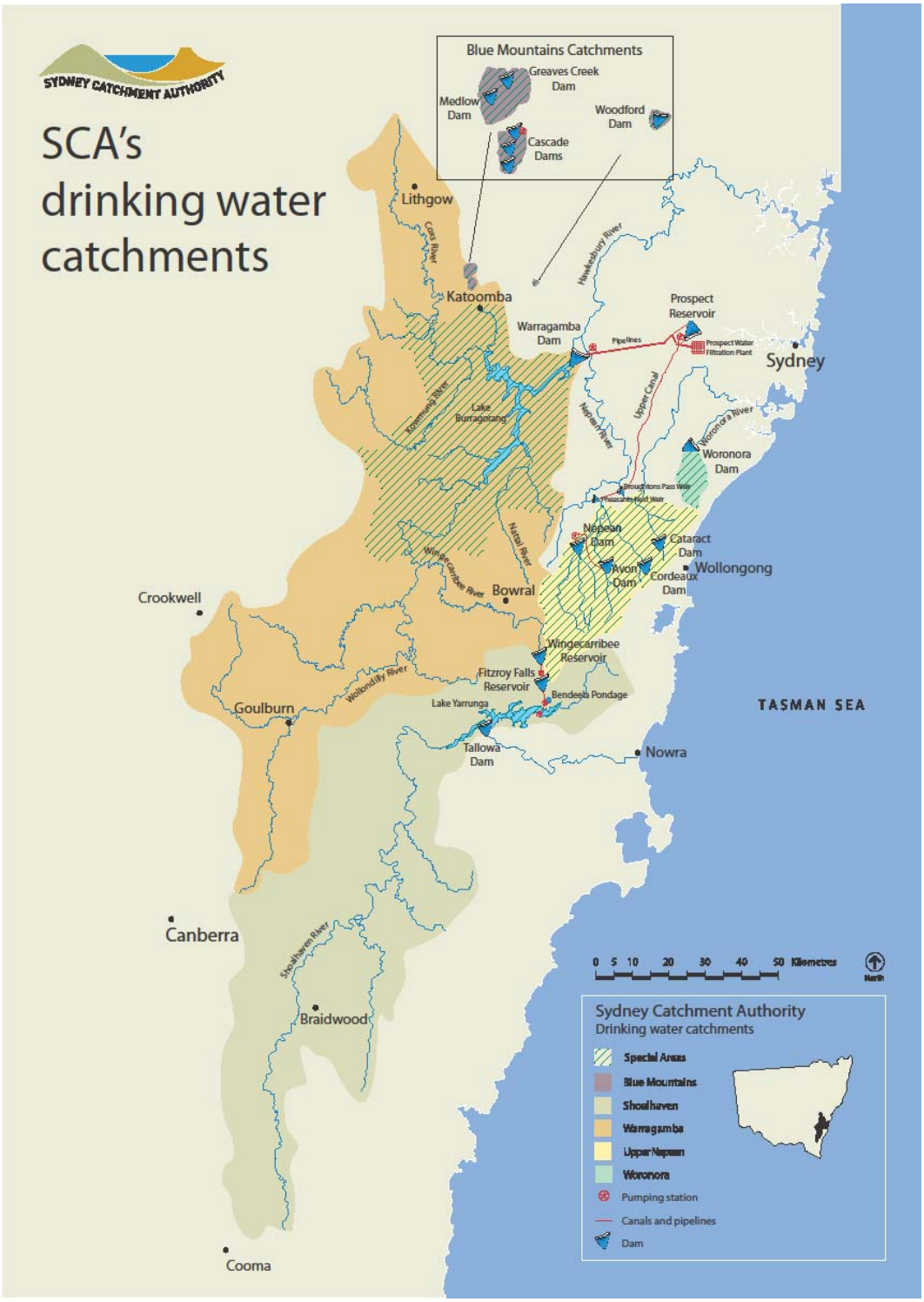
SCA uses a multi-barrier approach to carry out its catchment management functions and protect water supplies. This involves:

- Protecting the quality of water entering the storages by monitoring and influencing activities and land condition in the outer catchments. This includes regulating development in the catchment and monitoring activities that can pollute the catchment.
- Improving the quality of water entering the storages by protecting and managing inner catchment lands (special areas) surrounding the storages by restricting access.
- Optimising water distribution among its storages and managing these storages.
- Optimising water quality by selecting the best quality water from different dams and by selecting the best quality of water from each dam.
- Using comprehensive water-quality monitoring programs.[20]

Figure 2.1 shows the catchment area extends from the headwaters of the Coxs River north of Lithgow to the Shoalhaven River south of Braidwood. A schematic representation of the water storages and infrastructure under SCA's control is shown in Figure 2.2.

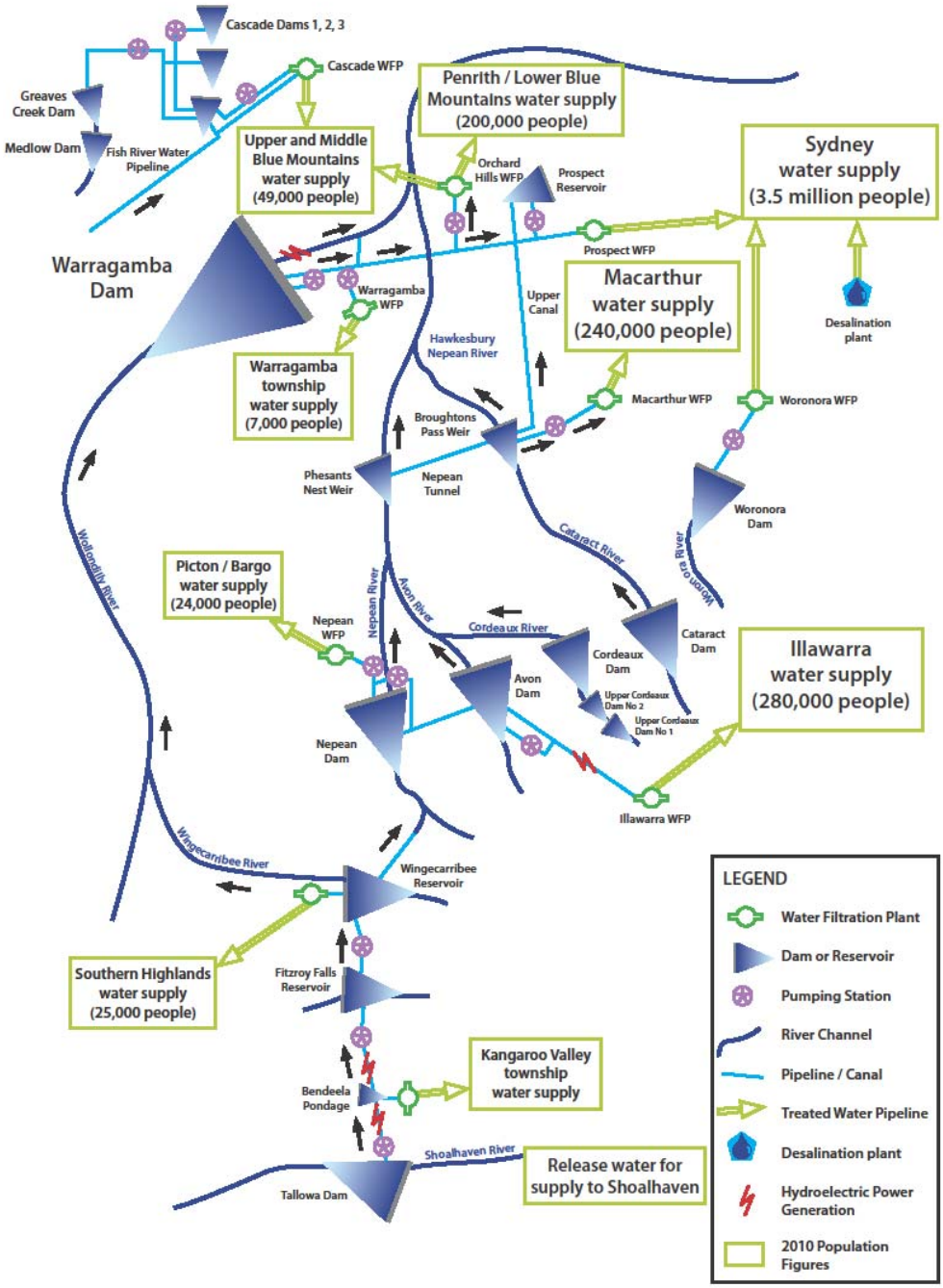
18 SCA, *Healthy Catchments Strategy 2009*-2012, p 2.
19 http://www.sca.nsw.gov.au/the-catchments/special-areas, accessed 22 June 2011.
20 As advised by SCA.

**Figure 2.1 SCA catchments and special areas**




**Source:** SCA, *Annual Report 2009-10*, www.sca.nsw.gov.au/publications.

**Figure 2.2 SCA schematic of water-supply infrastructure and operational control**




**Note:** SCA infrastructure only includes infrastructure upstream of water filtration plants (WFP). Other infrastructure is controlled by organisations other than SCA. The Desalination Plant is owned by a subsidiary of Sydney Water, the Sydney Desalination Plant Pty Ltd.

**Source:** http://www.sca.nsw.gov.au/dams-and-water/water-supply-diagram, accessed 26 May 2011.

## 2.2 Regulatory framework

IPART is only one of SCA's regulators. As already mentioned, SCA is governed by the *Sydney Water Catchment Management Act 1998* (the Act), as well as other regulatory instruments relating to water quality, dam safety, natural resource management and environmental protection.

Key aspects of SCA's regulatory framework are discussed below. Box 2.2 summarises SCA's regulatory context.

### Box 2.2 The SCA's regulatory context

- **IPART**, which is responsible for setting the maximum prices that SCA can charge for the provision of water to Sydney Water and other customers. IPART also recommends any operating licence amendments to the Minister, and is responsible for monitoring and reporting compliance with the operating licence. IPART also co-ordinates the NSW component of the national benchmarking project for major urban water utilities, including SCA. The benchmarking project involves the collection and audit of various performance, customer service and financial data, with the combined results forwarded to the National Water Commission.[a]
- The **Department of Primary Industries**, which includes:
  - **NSW Office of Water (NOW)**, which has primary responsibility for the management of water resources throughout NSW. From 1 July 2011, under the Greater Metropolitan Water Sharing Plan, SCA's existing water management licence is replaced with water access licenses detailing water entitlements and works approvals for management of the infrastructure that stores and releases water.[b]
  - **Fishing and Aquaculture,** which has imposed requirements on SCA (under the *Fisheries Management Act 1994*) to install infrastructure enabling fish to migrate along river systems within the catchment area.
  - **Dam Safety Committee**, which is responsible for formulating measures to ensure the safety of dams, and maintaining surveillance of 'prescribed dams' (which include those under the management of SCA). This function is conducted under the *Dams Safety Act 1978*. Under the *Mining Act 1992,* the Dam Safety Committee has statutory functions, through advice to the responsible Minister, in determining the type and extent of mining allowed near prescribed dams and their storages.[c]
- **NSW Health and the Office of Environment and Heritage (OEH)** each have a Memorandum of Understanding (MoU) with SCA, as required by section 36 of the Act. The requirements of each MoU are defined in SCA's operating licence. The MoU with NSW Health deals with water-quality standards and public health, and the MoU with OEH relates to environmental protection. In recent years, OEH has also been appointed by the Minister to undertake audits of Sydney's drinking water catchment (the Catchment). These audits are required in accordance with section 42A of the Act.

**Notes:**

[a] *National Water Initiative (NWI) Agreement* 2004.

[b] Email received from SCA, 19 May 2011.

[c] Dam Safety Committee NSW, *Dam Safety Committee Background, Functions and Operations*, General Guidance Sheets (DSC1A), June 2010, available from www.damsafety.nsw.gov.au

### 2.2.1 The current operating licence

The Governor grants an operating licence to SCA in accordance with the *Sydney Water Catchment Management Act 1998*.[21] IPART makes recommendations about the granting, amendment or cancellation of the operating licence.[22]

The purpose of the operating licence is to set out the terms and conditions under which SCA should meet the objectives and other requirements imposed on it in the Act, and to ensure that it is subject to appropriate performance standards, indicators and reporting requirements.[23]

The current licence started on 8 April 2011 and expires on 30 June 2012. Only minor changes were made to the previous licence to update it and reflect changes to the legislation. We hoped that arrangements for the future governance of the water market would be further clarified during the short licence period.

Despite some remaining uncertainty regarding governance arrangements for the water market, we now intend to undertake a more comprehensive end-of-term review of SCA's licence. We considered the advantages of developing a licence that is more risk-based and outcome-oriented outweigh the benefit of any further delays. Subject to our review, we intend to recommend a new 5-year licence for SCA, commencing 1 July 2012.

### 2.2.2 The catchment audit

The *Sydney Water Catchment Management Act 1998* requires that an audit of the state of the catchment be undertaken every 3 years, and that a report on that audit be submitted to the Minister responsible for SCA. The Minister is to appoint a public authority or other person to carry out the audit.

The Office of Environment and Heritage (OEH) was nominated to undertake the 2010 audit, covering the period from 1 July 2007 to 30 June 2010. The 2010 audit report is available at OEH's website (www.environment.nsw.gov.au). Its recommendations are listed in Chapter 7.

### 2.2.3 Environmental planning instruments

The State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (SEPP 2011) is a key instrument in SCA's regulatory framework. This seeks to cover everything previously covered by the Drinking Water Catchments Regional Environmental Plan No 1 (REP).[24]

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21 Clause 25 of the Act.
22 Clause 30A of the Act.
23 See section 1.1 of SCA's operating licence.
24 This repealed the State Environmental Planning Policy No 58 (SEPP 58) which was formerly applicable.

Previously, the REP assisted SCA in its catchment protection function, and also imposed requirements and responsibilities on SCA. The SEPP 58 required councils to only grant approval to developments that, among other things, demonstrated a neutral or beneficial effect on drinking water quality, and to seek agreement from SCA for certain developments.

The SEPP 2011:

- declares the area of land comprising the Sydney drinking water catchment
- requires that the recommended practices and performance standards of SCA are publicly available, and are incorporated in any development or proposed activity in the catchment area
- specifies the application of a Neutral or Beneficial Effect (NorBE) test on water quality by consent authorities
- outlines the concurrence role of the Chief Executive of SCA.

The SEPP 2011 does not continue the requirements of the REP for rectification action plans or water-quality objective reporting requirements. The plans which were required under the REP have been completed.

### 2.2.4 Bulk water supply agreements

Section 22 of the *Sydney Water Catchment Management Act* requires SCA to enter into arrangements with Sydney Water regarding the supply of water. The arrangements are to deal with water quality, continuity of water supply, the maintenance of adequate reserves of water by SCA and the cost paid by Sydney Water. In addition, SCA's operating licence requires it to establish and negotiate with other customers the terms and conditions of water supply.

SCA's Bulk Water Supply Agreement with Sydney Water commenced in September 1999 for a term expiring on 30 June 2004. This term was subsequently extended to the end of 2005. A new Bulk Water Supply Agreement commenced in April 2006 for an unspecified period.[25] The current agreement is being reviewed. The Act requires public consultation in this process – which occurred in December 2010 – and with IPART. IPART is also required to write a report to the relevant Minister about the review.

SCA has also finalised Bulk Water Supply Agreements with Shoalhaven City Council and Wingecarribee Shire Council.[26] We expect that SCA will also develop a Bulk Water Supply Agreement with Goulburn Mulwaree Council, in light of the planned Wingecarribee to Goulburn pipeline.

25 IPART, *Sydney Catchment Authority Operational Audit 2006/07*, Report to the Minister, Appendix B, *Final Audit Report – Halcrow Pacific Pty Ltd*, December 2007, p 3–5.

26 www.sca.nsw.gov.au/water-quality/bulk-water-supply-agreements, accessed 9 May 2011.

### 2.2.5 The 2010 Metropolitan Water Plan

The 2010 Metropolitan Water Plan is the NSW Government's strategy for ensuring that Sydney's water supply matches demand over the next 15 years. The plan identifies major capital projects to be undertaken by SCA, a new operating regime for the Sydney Desalination Plant, a new drought-restrictions regime for the metropolitan area, and continues the current rules for transferring water from the Shoalhaven River. These elements of the plan are explained in more detail below.

#### SCA's forecast capital works program

The 2010 Metropolitan Water Plan commits SCA to the following capital works programs.

**Rehabilitation/replacement of the Upper Canal**

The Upper Canal is a 130-year-old, 64km-long combination of open channels, tunnels and aqueducts that transfer water from SCA's Upper Nepean water storages to Sydney Water's Prospect Reservoir. It transports around 30% of Sydney's water supply.[27] The catchments of Upper Nepean and Shoalhaven rivers provide more reliable inflows than Warragamba, and with potential climate change, may become even more important to Sydney's water supply. The canal also provides flexibility to change the source or mix of water supplied to Sydney in response to water-quality issues, or to planned or emergency system maintenance.

Since its construction, urban development has encroached on the canal and presents a significant threat of pollution. The 2010 Metropolitan Water Plan calls for the rehabilitation and/or replacement of the canal, with concept plans to proceed throughout the time of the current plan. SCA has supplied forecast costs up to 2015 for rehabilitation of the canal but the cost of replacement is yet to be finalised.[28]

**Environmental flow infrastructure for Warragamba Dam**

The 2010 Metropolitan Water Plan commits the Government to making a decision on Hawkesbury River environmental flows in time for the next plan in 2014, with the infrastructure implemented by 2018. Infrastructure investments are needed to release the flows.[29]

27 NSW Office of Water, *2010 Metropolitan Water Plan*, p 24.
28 There is some indication that the cost could reach $1b.
29 As advised by SCA, early estimates of the costs of this infrastructure are around $50m–$100m.

**Upgrades to the Shoalhaven transfers**

Shoalhaven River is an integral part of the water supply system. Since the 1970s, in times of drought, Sydney, the Southern Highlands and the Illawarra have relied on water pumped from Tallowa Dam on Shoalhaven River to boost total dam storage and supplement water supplies. Water is transferred using the river system to provide additional water in Warragamba Dam or the Upper Nepean dams.

Several options have been considered to transfer more water from Tallowa Dam to Sydney, the Southern Highlands and Illawarra, if required in the future.[30] Some of these options have the benefit of protecting the health of the river system by reducing the use of rivers to transfer water between dams. Based on community feedback, scientific and engineering investigations, and social, economic and cultural heritage assessments, 3 options were shortlisted for transferring more water from Tallowa Dam if required in the future. Further detailed technical investigations of these options were undertaken, with the preferred augmentation option being a tunnel from Burrawang to Avon Dam.

The plan suggests that infrastructure for transferring water from the Shoalhaven system to Sydney and the Upper Metropolitan Dam system/Illawarra will be constructed to provide more water and replace the current run-of-river process by 2025.[31]

## SCA's operating context

**Shoalhaven transfers for SCA**

The 2010 Metropolitan Water Plan has continued the current rules for the transfer of water from Shoalhaven River, namely:

- Transfers from Tallowa Dam in Shoalhaven River begin when Sydney's total dam storage level falls below 75%, but only while the storage level of Tallowa Dam is above its minimum operating level of minus 1 metre from full supply level.
- In severe drought, the plan allows the minimum operating level for transferring water from Tallowa Dam to Sydney to lower to minus 3 metres.
- SCA must cease water transfers from the Shoalhaven system when total system storage reaches 80%.

A 3-year Ministerial moratorium on Shoalhaven transfers is due to expire in November 2011.

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30 As a result of climate change, the Sydney Climate Change Study (NSW Office of Water, *Climate change and its impact on water supply demand in Sydney*, summary report) concludes that the role of SCA's Shoalhaven and metropolitan/coastal dams is likely to increase as its inland catchments get drier.

31 The Centre for International Economics expects the project to cost around $500m (CIE, *Cost Effectiveness Analysis – 2010 Sydney Metropolitan Water Plan,* prepared by NSW Office of Water, April 2010, p 66.

**Desalination Plant Operating Rules**

The desalination plant will run at full capacity (ie, 90GL/year) during a 2-year 'defects correction period', which will end in mid-June 2012. After this period, the plant will operate at full production capacity, supplying desalinated water when the total dam storage level is below 70% and until the total dam storage level reaches 80%. The 2010 Metropolitan Water Plan notes:

> …if necessary, the Government will be able to operate the desalination plant at other times to secure water supplies (for example, if the availability of water from other parts of the supply system were affected by technical or other problems.[32]

The desalination plant has been designed and constructed so that if needed, it can be scaled up to produce up to 180GL of water a year. Should Sydney's total dam storage level drop again under severe drought conditions, the Government could decide to build the second stage of the plant – essentially scaling up the existing plant to supply twice as much water. The exact timing of the decision would be influenced by predicted weather patterns, and seasonal and projected dam levels.

**Drought restrictions enforced by Sydney Water**

In 2010, the NSW Government announced a revised mandatory restrictions regime, made up of 2 levels commencing at around 50% and 40% of Sydney's total dam storage levels. If storages fall below 50%, mandatory restrictions will be imposed. These restrictions will be further tightened should storages fall below 40%.

Sydney's total dam storage level, predicted weather patterns, the season, and demand forecasts will influence the exact timing for introducing drought restrictions. Sydney Water's operating licence notes it may place conditions on customers' water use at the discretion of the Minister or the Government.

In times of extreme drought, additional options have been identified in the Plan. These include reducing the allowable drawdown to 3m below Tallowa Dam's full storage to extract more water the Shoalhaven River, accessing groundwater, setting voluntary conservation targets and modifying environmental flow-release rules.

### 2.2.6 The Greater Metropolitan Water Sharing Plan

The Greater Metropolitan Water Sharing Plan was gazetted on 3 March 2011 and will commence on 1 July 2011. Currently Sydney Water draws water for its North Richmond plant from the Hawkesbury River, and pays only water entitlement charges to the NSW Office of Water (NOW).[33]

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32 NSW Office of Water, 2010 Metropolitan Water Plan, p 36.
33 As advised by SCA.

The current extractions for Sydney Water at North Richmond are approximately 7.5GL/year, based on a climatically representative period of 1993–1999. In the plan, an additional 8GL has been allowed for the long-term average extraction limit for consumptive purposes below Warragamba Dam.[34] The Greater Metropolitan Water Sharing Plan is based on the assumption that extractions will be conditional on equivalent releases from SCA's Warragamba Dam.

The plan also changes SCA's reporting requirements. SCA may argue that these requirements increase its costs. From 1 July 2011, SCA is to provide:

- Daily information required by NOW to assess extractions and release requirements under the Water Sharing Plan.
- A weekly report of its daily *planned* releases and transfers. This contrasts to the current practice of weekly publication of actual water movements in arrears.[35]

## 2.3 Incentive regulation

SCA is regulated through our determination of the maximum prices that it can charge for specific monopoly services over a determination period. The determination of SCA's revenue requirement is a vital element of our price-setting process. The calculation of the revenue requirement is based on an analysis of the efficient operating and capital costs that SCA would incur in providing appropriate levels of service over the determination period. We consider all the factors outlined in section 15 of the IPART Act when setting prices, with the aim of generating a required level of revenue.

Historically, we have used a building-block methodology to calculate SCA's revenue requirement. The building block costs-of-service provision comprises operating and maintenance costs, administration costs, depreciation (return of capital) and rate of return (return on capital).

One of the key aims of incentive regulation is to encourage SCA to achieve the efficiency targets outlined in the building-block approach. SCA has an incentive to achieve efficiencies, because it is allowed to retain in full the benefits of any efficiency gains over the determination period (through higher profits). The opposite will apply if SCA does not achieve the expected efficiency improvements.

Chapter 5 provides a detailed overview of our approach to setting prices.

34 NSW Office of Water, *Draft Water Sharing Plan, Greater Metropolitan Region unregulated river water sources*, Background document, p 28.

35 Email received from SCA, 19 May 2011.

## 2.4 Service quality standards

When we set prices for water services, our approach assumes that existing standards of service will, at least, be maintained. For SCA's customers, service quality primarily relates to catchment management, water quality and reliability of supply.

SCA's operating licence contains a number of service-related standards and requirements, which are reviewed as part of the annual audit process. SCA's 2009/10 performance against the provisions of its operating licence, shows that it achieved full compliance with the majority of the audited sections, which included clauses relating to raw water quality, catchment management and protection, the environment, and catchment infrastructure works and water conservation management.[36] In reviewing the operating licence, we will be considering the costs and benefits of making changes to service-related standards and requirements before recommending any changes. The costs associated with any changes to the licence will be added to our review of SCA's prices.

Generally, the amount that customers are willing to pay for a service is linked to the level of expected service quality. In reviewing SCA's prices, our considerations include relating actual and proposed expenditure to service-quality outcomes, and ensuring an appropriate matching of service-quality levels with customers' willingness to pay. We will also consider the changes in SCA's operating environment and the risk this poses for SCA's financial viability when determining prices.

IPART seeks information and explanation from SCA on:

1 The risks or uncertainties in SCA's operating environment over the upcoming determination period and beyond, including the nature of these risks or uncertainties and the likelihood of these impacting on specific costs (for example, electricity charges).

2 How SCA has ascertained the appropriate service levels that it plans to provide over the upcoming determination period, and how these service levels relate to forecast costs.

[36] Of the 48 clauses audited, 34 clauses were assessed as fully compliant, 4 clauses as high compliance and 7 clauses as moderate compliance. Two clauses were deemed to have insufficient information.

# 3 The form of the operating licence

In keeping with the principles for best regulatory practice, we consider the form of the operating licence should be flexible, efficient and effective, while meeting legislative provisions that require it to contain specific obligations.

In this section, we examine the different approaches used to regulate SCA and other public utilities. We recommend the adoption of a system-standards approach within the 2012 licence and the development of a separate reporting manual, where all reporting obligations would be placed. This approach has recently been adopted by Sydney Water, and for private corporations licensed under the *Water Industry Competition Act 2006* (WIC Act). A similar approach is also being considered for the 2012 Hunter Water licence.

## Costs and benefits

We are mindful of concerns about the burden of regulation, the costs that such regulation adds to SCA's business activities, and the fact that these costs must ultimately be passed on to customers. To address these concerns, and in accordance with good regulatory practice, as part of this review we will undertake an analysis of the costs and benefits of the proposed licence amendments discussed in chapters 3 and 4 and summarised in Appendix A. We intend to consider this analysis in making our final recommendations to the Minister for Primary Industries on amendments to the licence.

For each of the proposed amendments to the licence (Appendix A), we are seeking stakeholders' views as to whether there are any more cost-effective or appropriate alternatives. For example, a stakeholder might consider that an existing provision is effective and doesn't need amendment; that an alternative measure, involving a different approach, standard or regulatory mechanism would be more efficient; or that the issue is already adequately regulated through other regulatory or non-regulatory means.

For each of the proposed amendments to the licence (Appendix A), we are also seeking information related to the possible costs and/or benefits of the amendment. If a stakeholder proposes an alternative course of action to a proposed amendment, we seek information from them about the possible costs and/or benefits of their proposed alternative.

The types of costs and benefits likely to arise for SCA as a result of a proposed amendment or proposed alternative may be:

- administrative costs or savings, including any increase or reduction in time associated with complying with, and reporting on, regulatory requirements
- compliance costs or savings, such as costs of training staff, developing new systems, changes to procedures, or processes resulting in higher or lower operational costs or capital expenditure
- economic impacts, such as increased efficiency or productivity, better or worse conditions for innovation, or improved or decreased competitiveness
- social and environmental impacts, such as better or worse public health and safety, water conservation or environment protection outcomes.

The types of costs and benefits likely to arise for customers and other stakeholders as a result of a proposed amendment or proposed alternative may be:

- higher or lower prices
- improved or diminished water quality, service standards or customer protections
- increased or reduced availability of information
- better or worse environmental health outcomes
- better or worse public health and safety outcomes.

Where costs or benefits can be quantified, we are seeking information that quantifies or enables the quantification of incremental costs[37] or benefits of each proposed amendment or alternative.[38] Where costs or benefits are not quantifiable, we are seeking:

- qualitative descriptions of costs or benefits of proposed changes (eg, improved competition), or
- quantitative indicators of costs or benefits of proposed changes (eg, customer inquiry response time improved by 2 days, or reduced number of dirty water incidents).

It is anticipated that SCA will be in a better position to quantify costs and benefits or provide quantitative indicators (where possible) than other stakeholders. Other stakeholders may find that they can only provide qualitative descriptions of costs or benefits, such as a belief that a proposed amendment or alternative will improve or diminish the quality of consumer information provided, or provide greater or lesser consumer protection, or better or worse environmental health outcomes.

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37 The costs incurred and savings made as a direct result of an amendment to the licence, and only to the extent that the costs or benefits differ from those that would have eventuated under the status quo.

38 Guidance on how to assess and quantify (where possible) costs and benefits is provided in *Guide to Better Regulation* and *Measuring the Costs of Regulation*, NSW Better Regulation Office: http://www.betterregulation.nsw.gov.au.

## 3.1 System standards

In previous reviews of water utility operating licences, we have identified the following types of standards that can be used to regulate water authorities and utilities:

- Prescriptive standards, which tell licence holders precisely what measures to take and require little interpretation on their part. These standards identify 'inputs' – the specific actions required of the licence holder in a particular situation.
- Goal-setting standards, which set out goals that the licence holder must aim to accomplish, such as ensuring the protection of public health. These standards leave it to the discretion of the licence holder as to how they achieve those goals.
- Performance standards, which specify the desired performance level, but leave the concrete measures to achieve this open for the licence holder to adapt to varying local circumstances.[39]
- Systems standards, which identify a particular framework, or series of steps, to be followed in the pursuit of a goal, ranging from the requirement to identify hazards and assess and control risks (found in many national standards), to the more ambitious requirement to engage in a particular systemic approach at an organisational level.[40]

The current SCA operating licence adopts each of these types of standards to manage different aspects of its operational areas.

In operational areas where we require the development of plans or programs to manage risks, we have used a combination of prescriptive and systems standards. To improve consistency and flexibility in the licence, we propose the adoption of a systems standard to regulate the operational areas.

### 3.1.1 Existing operating licence

The current operating licence covers a range of operational areas, including:

- raw water quality
- catchment management and protection
- the environment
- asset management.

Each of these operational areas includes licence conditions requiring the development of frameworks (using a system standard) to some operational areas, while it prescribes specific requirements (using a prescriptive standard) in others.

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39 May, Peter J, *Performance-Based Regulation and Regulatory Regimes*, Center for American Politics and Public Policy, University of Washington, November 2003, p 1.

40 Gunningham, Neil, *Working Paper 42: Evaluating Mine Safety Legislation in Queensland,* Australian National University, National Research Centre for OHS Regulation, p 4.

A summary of the plans, programs and frameworks, as well as the regulatory approach currently used, is included in Table 3.1.

**Table 3.1 Summary of plans/frameworks required to be maintained**

| Obligation to develop a plan/framework | Clause | Regulatory approach |
|---|---|---|
| Water Quality Monitoring Program | 3.6 | Prescriptive standard |
| Water Quality Management Framework | 3.7 | Systems standard |
| (Water Quality) Incident Management Plan | 3.7.7 | Prescriptive standard |
| Plans of Management for Special Areas | 4.2 | Prescriptive standard[a] |
| Environment Management Plan/programs[b] | 5.1 | Prescriptive standard |
| Leakage and Loss Management Report/programs | 6.4.3 | Prescriptive standard[c] |
| Asset Management System | 7.1 | Systems standard |

**a** The standard is implied in the licence but is detailed in the Act.

**b** This obligation was originally to develop a 5-year environment plan, but was changed to require SCA to maintain programs in accordance with what was previously in the plan.

**c** Preparation of these programs is implied in the licence but is not strictly a licence condition.

The following points discuss in more detail the different approaches to regulation in the operational areas regulated by the licence.

### Water quality

The existing operating licence requires SCA to comply with the Australian Drinking Water Guideline 2004 (ADWG) relating to the management of the catchment and SCA's infrastructure. The ADWG outlines a comprehensive, risk-based framework (applying a systems standard) for managing water quality.

Sydney Water has a similar obligation in its operating licence, which requires it to manage drinking water quality in accordance with the ADWG to the satisfaction of NSW Health, giving regard to the entire drinking water system, from source to consumer. We intend to modify SCA's licence obligation so it is more similar to Sydney Water's obligation, while acknowledging SCA's role as a water supplier.

Within the current SCA licence, there are also some prescriptive conditions relating to water-quality standards, monitoring and reporting that duplicate the requirements set out in the ADWG. We intend to remove this duplication (for further details see section 3.2 of this paper).

### Catchment management

The catchment management section of the licence requires SCA to manage and protect the catchment area consistently with the objectives and functions under the Act, as well as report on SCA's activities in the catchment.

The relevant objectives and functions are:

- to protect the quality and quantity of water in catchment areas
- to ensure that the catchment areas and the catchment infrastructure works are managed and protected to promote water quality, the protection of public health and safety, and the protection of the environment
- to conduct its operations in compliance with the principles of ecologically sustainable development contained in the *Protection of the Environment Administration Act 1991*, where its activities affect the environment
- to undertake research on catchments generally, and in particular on the health of SCA's catchment areas
- to undertake an educative role within the community.

As it is currently drafted, the above obligations represent a goal-setting standard, rather than a prescriptive or systems standard. This approach leaves to SCA's discretion how it will achieve the goals set out in the Act.

Catchment management in Australia is usually incorporated into the water-quality management framework in the ADWG and environmental management frameworks such as AS/NZS ISO 14001. As we will possibly require SCA to meet both these systems standards in other parts of the licence, we consider it appropriate to retain the current goal-setting standard in the licence. This will avoid duplicating systems standards in the catchment management context.

### Environmental management

The environmental management section of the licence contains conditions that outline the precise requirements for environmental management programs (ie, applying a prescriptive standard).

Specifically, the licence requires that SCA maintains environmental management programs that must:

- include programs to manage and minimise the environmental impacts from its activities, such as energy and water consumption, greenhouse emissions, waste and cultural heritage
- comply with principles of ecologically sustainable development
- be recognised in its business plans
- incorporate environmental-improvement targets and timetables for SCA to achieve over the term of its business plans.

SCA has previously advised that it is incorporating its environmental management programs into its corporate sustainability strategy. This means that environmental management will be part of the corporation's management systems, rather than in a prescribed plan.

### Asset management

Currently, the licence's asset management obligation requires SCA to manage its assets consistently with a range of prescriptive principles. There are also some reporting and auditing requirements of management systems. The principles were considered sound when first developed, but should be updated to be made more comprehensive and in line with best practice for asset management systems. See Box 3.1 for this discussion.

## 3.1.2 Preferred approach to the preparation of plans

In keeping with the principles for best regulatory practice, we consider the form of the operating licence should be flexible, efficient and effective, while meeting legislative provisions that require it to contain specific obligations.

In recent years, regulatory instruments have increasingly evolved from prescriptive specifications to more adaptive and preventive systems standards, known as management systems. This approach to regulation is beneficial because it:

- is driven by outcomes, and so focuses on outcomes that are materially significant
- is adaptive to changing circumstances, including social and technological change
- allows easier identification and prioritisation of key issues
- requires continual improvement processes to be in place
- is enforceable, since it incorporates an audit process
- ensures accountability, since decisions on necessary actions to meet compliance requirements are typically left to the regulated entity.

Effective management systems take into consideration all activities that have an impact on the relevant subject area, and are implemented at all levels within an organisation, regardless of its size or function. A management system, be it quality, catchment or environmental, should operate seamlessly across all components of an organisation as part of its day-to-day business.

There are arrangements for the certification of management options by third parties, under, for example, the ISO arrangements. This may permit the scope of IPART's operating licence audits to be reduced where they duplicate the requirements of the certification scheme. However, we would first require an industry expert to review the technical adequacy and completeness of the management system as part of an operating licence audit.

The added attraction of management systems is that they apply a consistent framework to each operational area, which allows these frameworks to be integrated and enables more effective business management. The current mixed approach in the SCA licence, which requires frameworks to be applied to some operational areas

(ie, water quality) but specific requirements to others (ie, environmental management) means there is no integration between the regulated operational areas.

While the Act requires some prescriptive elements to be included in the operating licence, we have found that prescribing the specific content of plans has not always achieved the desired outcomes. It is only possible to prescribe requirements in relation to circumstances we are aware of or able to predict. As such, the licence does not cover issues that have arisen and/or new industry standards that have been developed during the term of the licence.

In its current prescriptive form, the licence cannot be applied flexibly to appropriately manage risks, especially in a changing operating environment. We consider there is potential to strengthen the systems employed by SCA for the benefit of its customers and other stakeholders.

### 3.1.3 Our proposed amendments

As part of the review, we will consider moving the focus of the operating licence away from prescribing the content of various plans to a more outcome-oriented, system-driven approach.

Adopting a certified system or framework approach is well established within water authorities, and represents good management and regulatory practice. For example, many Australian water authorities are now well advanced in developing Environmental Management Systems (EMS), and a significant proportion of the larger utilities have received certification of their EMS against AS/NZS ISO 14001. The benefits of a certified system include increased public reassurance in the system and some economies of auditing costs (between regulatory and certification audits).

We recommended a systems standard approach for Sydney Water's new licence, which was reviewed and amended in 2009/10. We are also currently reviewing Hunter Water's licence and are considering a similar approach.

We are therefore considering amending SCA's licence in the following areas:

- A new licence condition requiring the development and independent certification of a Quality Management System in accordance with AS/NZS ISO 9001:2008 (Quality Management Systems – Requirements) within a specified timeframe.
- An amended licence condition to replace the environmental management programs clauses, which requires the development and independent certification of an EMS in accordance with AS/NZS ISO 14001:2004 (Environmental Management Systems – Requirements with guidance for use) within a specified timeframe.

- An amended licence condition to manage raw water quality in accordance with the Australian Drinking Water Guidelines 2004 to the satisfaction of NSW Health, which would encompass the entire drinking water system, from source to consumer, and commence immediately. Adding the 'catchment to tap' element to the obligation is consistent with the approach used in the latest end-of-term review of Sydney Water's operating licence.
- A new licence condition requiring the development of an asset management framework in accordance with recognised industry practice (see Box 3.1), within a specified timeframe.

While adopting a systems-standard approach is less prescriptive than the approach taken in the current operating licence, it does not reduce standards or safeguards. Conditions relating to management systems would ensure:

- the licensee develops the systems in accordance with an industry standard or framework
- the adequacy of the systems is audited or, where possible, independently certified
- the systems are fully implemented
- compliance with the systems is audited.

**Box 3.1 Asset management frameworks**

The Institute of Asset Management and the British Standards Institute have developed a Publicly Available Specification BSI PAS55:2008 (PAS 55) Asset Management standard, which sets out best practice in asset management systems.

PAS 55 comprises a definition of terms in asset management, requirements specification for good practice and guidance for the implementation of such good practice.

PAS 55 provides objectivity across 28 aspects of good asset management, from lifecycle strategy to everyday maintenance (cost/risk/performance). It enables the integration of all aspects of the asset lifecycle: from the first recognition of a design need, to acquisition, construction, commissioning, utilisation or operation, maintenance, renewal, modification and/or ultimate disposal.

Through risk analysis, PAS 55 provides a framework to prove reliability and demonstrate that asset management risks are being tackled properly and in a way that can be assessed and independently verified. PAS 55 can be used for benchmarking, improvements planning, independent audit and demonstration of competence.

Similarly, the Water Services Association of Australia (WSAA) has developed an asset management and benchmarking tool named Aquamark.

The Aquamark tool aims to provide a consistent framework for identifying gaps and opportunities for asset management processes, data and information system improvement, as well as benchmarking the status of asset management processes, data and information systems between utilities.

The Asset Management Framework within Aquamark is structured into 7 key functional areas:

- Corporate Policy and Business Planning
- Asset Capability Planning
- Asset Acquisition
- Asset Operation
- Asset Maintenance
- Asset Replacement and Rehabilitation
- Business Support Systems.

Both of the above approaches warrant further investigation as appropriate frameworks for the management of SCA's assets.

At the same time as adopting a systems-standard approach, we recognise that the Act requires the operating licence to prescribe certain quality and performance standards for water quality and service interruptions. In light of these requirements, we have analysed the current operating licence to identify those conditions that must be retained as prescriptive conditions, and those that could be regulated by a systems standard. A summary, showing where the current prescriptive conditions are proposed to be retained, is provided in Appendix A.

We will consider further reducing the requirements to produce plans and programs to the extent that the content of those plans and programs is incorporated into the management systems or frameworks.

IPART seeks comment on the following:

1 What is the level of support for the proposed adoption of a systems- or framework-standard approach to operational areas in the licence? If low, is there support for the existing provisions or an alternative approach or amendment?

2 What are the quantifiable and qualitative costs and/or benefits of the existing licence provisions?

3 What are the quantifiable and qualitative costs and/or benefits of the proposed adoption of systems- or framework-standard approach to operational areas in the licence?

4 Whether it is reasonable to reduce the scope of IPART's operating licence audits where suppliers are certified under third party arrangements such as ISO.

5 Are there alternative approaches or amendment(s) to the operating licence? If so, are there examples and quantifiable and qualitative costs and/or benefits of these alternatives?

6 If there is support for the proposed adoption of a systems- or framework-standard approach to operational areas in the licence, which infrastructure management approach (PAS 55 or Aquamark) would be supported?[41] Are there other approaches we should be considering?

7 Are there any other considerations we have failed to take into account in proposing to adopt a systems- or framework-standard approach to operational areas in the licence?

## 3.2 Reporting manual

Applying the principles of better regulation, the structure of the SCA licence should be simple, minimise regulatory overlap and avoid regulatory inconsistency. Inconsistencies or overlap can waste resources, create confusion and reduce the regulated utility's level of accountability.

### 3.2.1 Reporting under the current operating licence

The current SCA operating licence combines specific requirements prescribed by the Act with requirements set out in other legislation relevant to the content of the operating licence.

41 See Box 3.1 for an explanation of PAS 55 and Aquamark.

The licence also outlines IPART's role in auditing and reporting on SCA. IPART is required by legislation to monitor SCA's compliance with its operating licence. We do this by receiving reports from SCA and undertaking and publishing annual compliance audits. We also report our findings to the Minister for Primary Industries.

Under the current operating licence, SCA's performance reporting obligations consist of a monitoring and reporting protocol obligation and numerous individual reporting obligations spread across the licence relating to each of the operational areas. The reporting obligations set out under the operating licence are outlined in Table 3.2.

**Table 3.2 SCA operating licence reporting obligations**

| Obligation to report | Clause |
|---|---|
| Annual report on nature, features and results of the Monitoring Program | 3.6.7 |
| Biannual report on trend analysis of water quality | 3.6.10 |
| Annual Catchment report | 4.1.2 & 4.1.3 |
| Annual report on Regional Environmental Plan | 4.3.3 |
| Information available on website | 4.5 |
| Annual report on environmental management | 5.1.5 |
| Annual report on performance against Schedule 2 | 5.2.2 & 5.2.3 |
| Report on independent expert's review of the model | 6.3.4 |
| Annual report on water conservation | 6.4.2 |
| Report on Asset management system | 7.2 |
| Annual report on complaints | 8.3.5 |
| Annual report on consultation activities | 8.4.2 |
| Information required for the annual audit | 11.5 |

In some areas, the licence also summarises the obligations of SCA by repeating its legislative requirements.[42] Other clauses within the licence potentially duplicate other regulatory requirements. For example, the clauses outlining water quality monitoring (clause 3.6), planning (clause 3.7) and incident management (clause 3.7) requirements duplicate the framework elements in the ADWG (clause 3.5).

To be effective, compliance reporting and auditing process must be rigorous. However, the process must also be efficient to avoid becoming an unreasonable administrative burden on either SCA or IPART, and an unwarranted cost to the community.

[42] For example, operating licence clauses 1.7, 1.8, 1.9, 2.2, 2.3, 4.2, 4.3 and 10.2.

We have identified several issues with the current structure of the operating licence where:

- Reporting requirements are not easily adapted in response to changes in the operating environment.
- Some licence conditions duplicate legislative or other requirements. This duplication creates the potential for conflict if the licence obligations are not amended in line with legislative changes. In the case of other requirements, such as framework application, duplication causes confusion about the extent to which guidelines should apply, by emphasising some elements of the framework while neglecting to mention other elements.
- Some conditions impose obligations on IPART[43]. Where obligations are not a requirement of the relevant legislation, it is not considered appropriate for an operating licence to place obligations on a party other than the regulated utility.

### 3.2.2 Our proposed amendments

The following is a summary of our preliminary view on proposed amendments to the general structure of the operating licence that we consider will be more effective and efficient than the current arrangements. The proposed amendments are consistent with the approach that is in place for private water utility licensees under the WIC Act, and for Sydney Water in its recently revised operating licence.

We consider that the licence should complement, and be consistent with, other regulatory requirements imposed on SCA. It therefore needs to reflect the broader regulatory framework applying to SCA, without unduly duplicating requirements prescribed by other regulatory instruments.

We propose that the amended structure of the licence:

- place all reporting requirements and performance indicators in a subsidiary reporting manual, which will remove the need for a licence amendment (see Box 3.2) and allow greater flexibility when changing reporting requirements
- address duplication by removing references to legislative requirements where they are not required and do not provide any additional guidance or auditable benefit
- ensure sufficient regulation of the entire asset base where it is not covered by other regulation (eg, the licence should only regulate dam safety where it is not currently regulated by the Dam Safety Committee)
- remove prescriptive reporting requirements in the licence in favour of adopting a more comprehensive systems- or framework-standard approach, as outlined in Chapter 4 of this paper

43 Section 31(4) of the Act states the Tribunal has other functions as imposed on it by the operating licence.

- remove obligations placed on IPART in the licence, as the licence is an instrument to regulate SCA only.

**Box 3.2 Reporting manual**

We propose to develop a reporting manual that consolidates all licence obligations, and include in the operating licence a requirement that SCA reports in accordance with the manual. Reporting arrangements for all obligations and performance indicators would be outlined in the manual.

Licence obligations prescribed by the Act would not be duplicated in the licence but would be included in a consolidated list of licence conditions in the manual. However, quality and performance standards would be included in both the licence and the manual, as section 26(1)(b) of the Act provides that an operating licence must include terms and conditions requiring SCA:

> … to ensure that the systems and services meet the quality and performance standards specified in the operating licence in relation to water quality, service interruptions and other matters determined by the Governor and set out in the operating licence.

The reporting manual would be publicly available on IPART's website. Similar manuals have been prepared for Sydney Water and private suppliers under the WIC Act, and can be viewed at www.ipart.nsw.gov.au.

The reporting manual will provide IPART with greater flexibility to address reporting issues and adapt performance indicators during the term of any licence. It will also assist in developing consistent compliance reporting across public and private water utilities.

In addition to the structural changes listed above, we also propose the following amendments for consideration and comment:

- remove background and explanatory information in the introduction to the licence
- review the licence wording so that it is written in simple, plain English for improved clarity.

IPART seeks comment on the following:

8 What other issues and changes should we consider in identifying improvements to the structure of SCA's operating licence, to better meet the licensing objectives and principles?

9 Are the proposed reporting manual arrangements adequate to consolidate and coordinate reporting requirements under the operating licence?

10 What are the quantifiable and qualitative costs and/or benefits of the proposed amendments addressing the structure of the licence?

11 What alternative approach(es) or amendment(s) should be considered to address issues related to the structure of the licence? Please include a summary of the quantifiable and qualitative cost and/or benefits of any alternative approach or amendment.

## 3.3 Performance indicators

The Act requires the licence to include the terms and conditions under which SCA is required to compile indicators of the direct impact of SCA's activities (including, but not limited to, the impact of energy used and waste generated) on the environment, to enable preparation of an annual report on SCA's performance[44], among other things.

Also, SCA reports a set of indicators to the National Water Commission for the National Performance Report each year. In addition, the SCA provides output measures to IPART for pricing determination purposes.

### 3.3.1 Current operating licence

Historically, the licence contained catchment and environmental performance indicators in schedule 2, which included indicators in the areas of:

- ecological health
- SCA's management of the catchments
- SCA's impacts on the environment.

In the last review, the name of the indicators was changed to environmental indicators to reflect the nature of the indicators and changes to the Act.[45]

### 3.3.2 Our proposed amendments

The indicator set collected for the National Water Commission's annual benchmarking study will be maintained as it currently stands.

We are conducting a separate review to examine the additional IPART performance indicators and output measures for major public water utilities (including SCA). The performance indicator review includes targeted stakeholder consultation. We will finish this review of performance indicators in July/August 2011, and stakeholders and SCA will be notified of the outcome.

44 Section 26(1)(c) of the Act.

45 In December 2008, catchment health indicators for the Sydney Drinking Water Catchment were gazetted as part of the Act, covering the themes of Land Use and Human Settlements; Biodiversity and Habitats; Water Availability; and Water Quality.

We propose to include the revised performance indicators in the reporting manual (see section 3.2), rather than in the 2012 licence. The indicators we propose for the reporting manual fall into 2 categories:

- *Water quality indicators* relating to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) and occurrences of Cryptosporidium and Giardia cysts or oocysts (see Section 4.2 for further discussion)
- All *National Water Commission indicators* applicable to SCA relating to volumes, energy used and waste created.

Section 5.3 discusses the price outputs for the 2012 determination period.

# 4 Specific licensing issues

Some licensing issues were raised by SCA and other stakeholders at last year's review of SCA's operating licence. At the time, it was decided to hold these matters over so that they can be comprehensively reviewed as part of this year's licence review. These matters included:

- SCA's calculation of the water supply yield, especially in light of the utility's changed operating environment
- a request by NSW Health for SCA to conduct a strategic review of the water monitoring program, in particular its Cryptosporidium and Giardia monitoring program
- public reporting to ensure that adequate disclosure is being made on the state of the catchment
- the appropriateness of SCA's customer service obligations, in light of its small customer base for raw and unfiltered water
- the appropriateness of the water conservation provisions within the licence.

## 4.1 Water supply management

Part 6 of the current licence requires SCA to undertake 2 important activities to manage the water supply for greater Sydney. The obligations can be summarised as:

- long-term planning – SCA is to calculate the long-term sustainable yield of the water supply system using inflows to the system, operational rules, environmental flows, infrastructure constraints, design criteria and the operation of the desalination plant [46]
- short-term operation – SCA is to manage its water supply infrastructure according to the operational rules and design criteria to supply water.[47]

As discussed in Chapter 2, the operating environment of SCA has changed and SCA is no longer the sole water supplier for Sydney Water. This presents SCA with challenges in fulfilling these 2 important activities, as accurate estimates require access to reliable data for all of the supply to Sydney's water supply system (so that it is optimised to meet the total demand).

46 SCA operating licence clause 6.2.
47 SCA operating licence clause 6.1.

Some of this data is held by third parties, due to the introduction of the desalination plant. It is necessary to access this information to calculate the yield with accuracy and efficiently manage the infrastructure on a day-to-day basis according to the operating rules and design criteria. To determine the water supply needed from the dams to meet the supply to Sydney Water's system, SCA (or an appropriate water supply manager) must be aware of the planned and actual water production of the desalination plant.

To effectively manage the water supply to meet demand in the short and long term, governance arrangements will have to be adjusted. While the 2010 Metropolitan Water Plan provides a high-level operating regime for the security of supply, greater clarification of the arrangements are required. The arrangements may cover issues such as:

- allocating responsibility for providing supply and demand information to enable appropriate short-term operation and long-term planning
- optimising the total water supply available to Sydney Water's system so that the least cost water is supplied to Sydney Water customers, while still ensuring security and reliability of the supply.

We propose to maintain the existing licence obligations while revised governance arrangements for the water market are being developed.

A more comprehensive review of this part of the licence should be undertaken once revised governance arrangements have been decided.

IPART seeks comment on the following:

12 Is the licence the appropriate instrument to contain detailed arrangements for governing the water supply market? Is the operating licence the appropriate regulatory instrument to clarify, monitor and enforce SCA's role in the water supply market?

## 4.2 Strategic review of monitoring program

In the recent end-of-term review for the current licence, NSW Health raised the issue of a strategic review of SCA's Cryptosporidium and Giardia monitoring program, including both routine and event-based monitoring. This is consistent with recommendations of the recent O'Keefe review[48], and the element of the ADWG which requires continual improvement in the authority's management system. SCA have undertaken a review of this work. We decided to examine this matter as part of the 2011/12 end-of-term licence review.

48 Recommendation 32 of the Sydney Water Inquiry's ten-year review is for early-warning and event-based monitoring, especially when potential for contamination is greatest.

The purpose of the review is to ensure that, while being as efficient as possible, the monitoring program is reflective of the risks to human health, rather than just reflecting the occurrence of these pathogens. The scope of the review would consider the likelihood of human-infectious Cryptosporidium and Giardia appearing in the raw water supply (which may require genotyping and viability testing). It would also focus on identifying Cryptosporidium and Giardia sources in the catchment to help prioritise further improvements.

We propose to require SCA to conduct such a review, to the satisfaction of NSW Health and IPART, by 31 March 2013, and at that time, to add a reporting obligation in the reporting manual to reflect the outcome of the review.

IPART seeks comment on the following:

13 Is the scope of the review of the Cryptosporidium and Giardia monitoring program appropriate? Are there issues which should be added to the review for consideration?

14 Is the proposed timing of the review of the Cryptosporidium and Giardia monitoring program appropriate?

## 4.3 Catchment health reporting

We want to examine the licence requirements related to SCA's reporting of development impacts in the catchment. This is to ensure there is sufficient information available publicly without duplicating reporting requirements in the operating licence where there are other reporting mechanisms in place.

An amendment to the Act made in 2007 requires the health of the Sydney drinking-water catchment to be audited every 3 years[49]. This catchment audit was undertaken in 2010 by the (then) Department of Environment, Climate Change and Water.[50] The audit report is available on the Department's website and covers the following 4 major themes:

- land use and human settlements
- biodiversity and habitats
- water availability
- water quality.

The 2010 audit reports on the impacts of such issues as power station and mining water discharges; long-wall mining impacts on rivers and streams; and blue-green algal blooms in Warragamba Dam.

49 Section 42A(4) of the Act.
50 The department is now the Office of Environment and Heritage.

Under the operating licence, SCA reports on its catchment activities in the Annual Catchment Management Report (which is posted on SCA's website). The report covers activities SCA undertakes in the catchment, including regulatory outcomes, improvements in sewerage, stormwater, education and land management.

IPART seeks comment on the following:

15 Are there other sources of publicly available reporting that provide information on catchment health for the Sydney drinking-water catchment, other than the 3-year catchment audit?

16 Is this amount of information on catchment health sufficient? Are there components of catchment health which are not reported on publicly and should be? Please include a summary of the quantifiable and qualitative cost and/or benefits of any additional reporting requirements.

## 4.4 Customer service/protection obligations

SCA has a small customer base of about 60 retail customers who receive raw and unfiltered water only. The terms and conditions under which each customer receives water are specific to the individual customer, and mostly they do not have a guaranteed supply. The basis used to set the prices for these customers was an outstanding issue in the 2009 price review.

The current licensing obligations are reflective of obligations on utilities with relatively large customer bases, such as Sydney Water, and include requiring SCA to:

- establish terms and conditions of supply with its customers and negotiate these where the customer does not agree to the terms and conditions
- advise customers of the potential uses for raw water supplied and the requirement for treating the water before human consumption
- establish internal complaints handling procedures based on the Australian standard, make information about the procedures publicly available, and provide it to the customers directly at least once every 2 years
- report to IPART annually on complaints
- consult with customers and community about its performance under the licence
- report to IPART annually on the consultation.

In the past, SCA has indicated that the implementation of these obligations is disproportionally intensive considering the size of the customer base.

We intend to review the customer obligations in light of the small customer base and would appreciate comments on the appropriate level of customer protection required in this licence.

IPART seeks comment on the following:

17 What customer-related obligations would be appropriate, given the balance required between regulatory burden on a small customer base compared with those receiving adequate customer protection? Please include a summary of the quantifiable and qualitative cost and/or benefits of the customer obligations.

## 4.5 Water conservation

The water conservation section of the licence requires SCA to:

- undertake practicable actions to conserve water and minimise water losses, including working with customers to achieve this
- report on the water balance as per the approved methodology
- report on actions relating to conservation, leakage and losses, and any demand management and supply augmentation activities undertaken by SCA.

SCA has indicated that reporting of these obligations is a significant regulatory burden with minimal public benefit, given the nature of SCA's operations.

In support of this view, SCA has previously advised that:

- it does not have a significant number of customers
- it only has 3 main water conduits which are all above ground, hence any leakage is easily detected and there are very low levels of leakage
- it is not a significant water user itself, because in its regular operations it only uses water in offices and facilities, many of which are leased premises with limited opportunity to modify their operation
- there are minimal opportunities to implement measures to conserve water.

SCA argues that in practice, it is able to take few actions to minimise leakage further, as the pipes are above ground and are regularly monitored. Losses are mainly from evaporation in storage dams and there are arguably no practical and economic options for reducing these losses while maintaining water quality.

We are considering removing these specific obligations on SCA in favour of the organisation addressing water conservation in the environmental management system, as water conservation is part of ecologically sustainable development.

IPART seeks comment on the following:

18 Is there any value in retaining the specific water conservation obligations, rather than incorporating it into the environmental management system? Please include a summary of the quantifiable and qualitative cost and/or benefits of any recommended water conservation obligations.

# 5 IPART's price determination process

This chapter outlines our proposed approach to setting prices and poses a number of questions related to the price-setting approach for the 2012 review of SCA's prices.

## 5.1 Length of the determination period

The first step in the price determination process is to determine the length of the price path. This decision will involve trading off the relative importance of aligning the next review of SCA prices with either its operating licence or with the next Sydney Water price review.[51] SCA's and Sydney Water's prices are linked because the revenue received by SCA from water sales to Sydney Water becomes part of the operating costs in the latter's books.

There are advantages and disadvantages when deciding upon a long- or short-pricing path. One advantage of a longer determination period is that it provides greater incentives for water agencies to achieve increased efficiencies, because they can retain any gains they make from reducing costs (in the form of higher profits) for a longer period of time. The longer period also provides a more stable and predictable regulatory environment for water agencies to plan and execute their operations. Conversely, a longer determination period can delay the delivery of benefits to consumers from efficiency gains made by water agencies, and can increase the risk associated with any inaccuracies in the data used to make the determination (eg, it may be difficult to reliably forecast expenditures many years into the future).

The current determination period for SCA runs for 3 years from 1 July 2009 to 30 June 2012. Generally, in the past we have found that 4- or 5-year price paths achieve the optimal balance between the advantages and disadvantages for the water utilities we regulate.

IPART seeks information and explanation from SCA on:

3 Its preferred length for the determination period.

IPART seeks comment on the following:

19 The length of the determination period that should apply to this review.

[51] IPART is reviewing the prices that Sydney Water can levy its customers with a commencing date of 1 July 2012. This is the same date that the new prices for SCA's customers will take effect.

## 5.2 Determining the notional revenue requirement

The next step in the price-setting process is to determine SCA's notional revenue requirement. This is calculated by analysing the efficient operating and capital costs of providing appropriate levels of service over the determination period. We will enlist the services of consultants to assist us in determining these efficient costs. In calculating the notional revenue requirement[52], we will also form a view on the efficiency gains that SCA can reasonably achieve over the determination period.

The purpose of incorporating efficiency gains into the notional revenue requirement is to provide SCA with guidance about its potential to improve the efficiency of its operating and capital expenditure, without reducing the quality of the services it delivers. The incentive to pursue efficiency gains arises from the fact that prices are set for the determination period and are not linked to costs actually incurred. If SCA can achieve better than expected cost savings during the determination period, it can expect to earn a higher return than we forecast.

We will also be including an additional operating cost building block to SCA's revenue requirement, to account for any licence changes that we may recommend to the Minister. We will conduct a cost-benefit analysis of any changes we recommend to SCA's operating licence in this review. Where licence changes are recommended, the efficient costs, as reviewed by an external consultant, will be included in SCA's revenue requirement.

In deciding on an appropriate allowance for return on and of capital expenditure and applying the building-block approach, we will incorporate all renewals and maintenance capital expenditure, where that expenditure is based on sound asset management practices and is appropriately justified by SCA. We will also decide the appropriate rate of return and depreciation to apply to SCA's regulatory asset base.

Additionally, before including costs associated with new capital expenditure programs funded by SCA, we will review the prudence and efficiency of the projects to ensure that only appropriate capital expenditure is recovered in prices. This is particularly pertinent for this review, given SCA is committed to a number of large capital expenditure programs, which will have impacts on prices over upcoming determinations. Our review includes examining the analysis underpinning the proposed projects to ensure that planned capital expenditure is directed to the most appropriate projects at an efficient cost.

52 In building up the notional revenue requirement we include a component for tax. Concurrently with this review we are reviewing our treatment of tax costs – we will release a separate discussion paper on this issue.

IPART seeks information and explanation from SCA on:

4 SCA's capital expenditure over the current determination period, drivers of this expenditure, and service outcomes achieved.

5 SCA's capital expenditure over the current determination period compared to expenditure allowed by IPART when it set prices in the 2009 Price Determination, and an explanation of variances.

6 SCA's projected capital expenditure program over the upcoming determination period and beyond, drivers of this expenditure, and expected service outcomes to be achieved.

7 SCA's asset management practices and plan, and the relationship between its asset management framework and its capital expenditure program.

8 The value and timing of contributions (including contributed assets) to SCA from government and/or other sources.

9 SCA's operating expenditure over the current determination period, drivers of this expenditure, and service outcomes achieved.

10 SCA's operating expenditure over the current determination period compared to expenditure allowed by IPART when it set prices in 2009, and an explanation of variances.

11 SCA's projected operating expenditure over the upcoming determination period, including drivers of this expenditure, expected service outcomes, specific efficiency programs and the potential for efficiency gains.

12 SCA's proposed methodology for calculating depreciation and assessing asset lives, and the assumptions used to determine these.

IPART seeks comment on the following:

20 The prudence of SCA's capital expenditure over the current determination period.

21 SCA's projected capital expenditure program, including its expenditure drivers, scope for efficiency gains, and proposed service outcomes.

22 An appropriate rate of return to apply to the value of SCA's Regulatory Asset base (RAB), and the means of calculating/determining this rate.

23 The appropriate asset life to apply for calculating SCA's depreciation charge for the price determination (with reference, where necessary, to SCA's submission).

24 The efficiency of SCA's operating costs incurred in the current determination period and the efficiency of its projected operating costs, as outlined in SCA's submission.

25 Whether there is scope for SCA to achieve further efficiency gains over the upcoming determination period.

## 5.3 Output measures

As part of our determination process, we specify outputs against which to measure the delivery of the proposed capital expenditure program over the determination period. Accordingly, in the 2009 SCA determination, we specified a set of output measures for SCA based on its proposed expenditure program (see Box 5.1). For this review, we will be seeking information from SCA on its performance against these output measures.

**Box 5.1 Output measures for SCA – 2009 determination**

- Deliver a strategy for the future of the Upper Canal by June 2013.
- Complete the Prospect Reservoir upstream embankment stabilisation upgrade by April 2013.
- Complete the Warragamba Dam crest gates construction project by June 2011.
- Complete the Wingecarribee Dam safety upgrade project by June 2013.
- Complete the Upper Nepean environmental flows works project by April 2010.
- Complete the Metropolitan Dams electrical systems upgrade project by April 2013.

We propose to maintain the use of output measures as a starting point for the assessment of prudent expenditure, and will be seeking from SCA a list of capital projects or activities that it plans to undertake over the upcoming period. We propose to revise SCA's output measures to reflect the nature of this expenditure program and will include this list of projects in the final determination report. We expect SCA to monitor its expenditure on these projects and provide annual progress reports throughout the upcoming period including any under or over achievement against these measures. We also expect SCA to provide a reconciliation of its expenditure and outcomes against the capital and operating expenditures allowed by IPART.

The output measures were part of the performance indicators review discussed in Section 3.3.

IPART seeks information and explanation from SCA on:

13 SCA's performance against its output measures.

14 Projects or activities that SCA plans to undertake over the upcoming determination period and expected outputs or outcomes of these projects.

IPART seeks comment on the following:

26 The effectiveness of output measures as indicators of the prudence of capital and operating expenditure.

27 SCA's progress or performance against its 2009 output measures.

28 How 'unders' and 'overs' against output measures should be addressed.

29 Appropriate output measures for SCA for the upcoming determination period.

## 5.4 Sales forecasts and the risks to revenue

Once we have established the notional revenue requirement, we will set prices for individual services to recover these costs. Forecasting water sales is a key factor in setting prices for SCA. If water sales forecasts are understated then customers may pay prices that are higher than needed; if water sales forecasts are overstated then SCA may not receive enough revenue to cover its costs. The inherent volatility in forecasting water sales may be greater than normal for this determination[53], and this increases the difficulties associated with making dependable revenue requirement forecasts.

Forecasting water sales for SCA is uncertain because:

- There are difficulties in projecting factors such as weather conditions.
- SCA's main customer (Sydney Water) faces its own demand uncertainties and can also purchase water from the Sydney Desalination Plant (currently a subsidiary of Sydney Water) and various recycled water schemes.
- The 2010 Metropolitan Water Plan stipulates that from 2012, the desalination plant will only operate at full capacity when storage levels fall below 70% until they reach 80%, but beyond those stipulations Sydney Water can choose to source water from the desalination plant or SCA.
- The NSW Government has plans to lease the desalination plant.
- The 2010 Metropolitan Water Plan includes a new drought restrictions regime.
- For the 2009 Price Determination, SCA was unable to justify its water forecasts for its smaller customers (but is required to do so for this review).
- There are uncertainties about the sales forecasts for the water releases, which SCA is obliged to make for Sydney Water's North Richmond plant under the Greater Metropolitan Water Sharing Plan (commencing 1 July 2011).

IPART seeks information and explanation from SCA on:

15 SCA's forecast water sales, by customer, over the upcoming determination period, taking into account relevant impacts including those detailed above.

IPART seeks comment on the following:

30 SCA's projected water sales, as outlined in its submission.

53 Given the recent end of the drought and the supply from the desalination plant.

## 5.5 Price structure

The next step in our price review process is to identify the broad pricing approaches that can be applied by SCA to translate revenue requirement into prices, and to assess the overall average impact of each of these approaches on SCA and its customers.

We then identify feasible pricing structures and calculate actual prices for all, or a selection, of the identified pricing approaches. We also evaluate the proposals advanced by SCA in its submission. Our general approach to pricing for metropolitan water utilities is to set a combination of periodic fixed and usage charges.

For this review, we will examine the structure of SCA's prices to Sydney Water and its other customers (local councils, raw and unfiltered), including the balance between SCA's fixed and volumetric charges, taking into account the principles of economic efficiency, potential impacts on SCA and water customers, and other factors identified in section 15 of the IPART Act (see Appendix C). In doing so, we will consider both the merits of a volumetric charge (compared to a fixed charge only) and the appropriate level of this charge, in the context of water supply augmentation measures in Sydney (ie, output from the desalination plant and several water recycling schemes) and investment in demand management programs. We will also be considering the merits of introducing scarcity pricing at the wholesale water level in this determination (this is discussed in Chapter 6).

IPART seeks information and explanation from SCA on:

16 SCA's proposed prices (including pricing level and structure, and prices per customer) over the upcoming determination period, and the reasoning or justification behind these proposals.

IPART seeks comment on the following:

31 The structure of SCA's prices for Sydney Water, the councils and its other customers.

# 6 Outstanding and emerging pricing issues

Chapter 5 described IPART's approach to price setting, including the standard factors we must consider in setting prices for SCA. There are some outstanding issues from the 2009 Determination that we will examine in the course of the 2012 review. There are also a number of new issues that have arisen since the 2009 Determination that will require investigation and analysis. The purpose of this chapter is to outline the nature of these issues and elicit comment from SCA and stakeholders in response to them. This will inform our analysis of these issues and assist in reaching decisions on these matters.

The outstanding and emerging pricing issues include consideration of:

- whether changes to SCA's operating environment have increased revenue risk
- how SCA's prices and price structures should be adjusted to deal with risks
- whether it is practical and appropriate to introduce scarcity pricing at a wholesale level
- how to respond to the size of SCA's efficient capital works program and its impacts for customer affordability
- SCA's progress with developing a more robust system of charges for local government, raw water and unfiltered water customers
- whether customers should bear the cost of non-commercial and heritage obligations that have been imposed by the Government.

## 6.1 Have changes to SCA's operating environment increased its revenue risk?

Chapter 2 described SCA's regulatory environment and the key changes to this regulatory environment since 2006. The NSW Government uses 2 main policy instruments to set the operating context of various water supply agencies, including Sydney Water and SCA:

- the 2010 Metropolitan Water Plan
- the Greater Metropolitan Water Sharing Plan.

These plans provide high-level objectives regarding water supply decisions across Metropolitan Sydney. As a result, any changes to SCA's operating environment as a

result of these policy documents have an impact on SCA's operations and thus our review of SCA's prices. Chapter 5 (section 5.4) briefly identified the key aspects of SCA's operating environment (including outcomes from these water plans) that impact on our sales forecasts for SCA, and therefore SCA's revenue risk.

This section discusses in more detail the implications of the various changes to SCA's operating environment, and asks whether these changes have increased the revenue risks it faces. The next sections discusses how, if risks have increased, this can be addressed through price structure and other means.

### 6.1.1 Shoalhaven transfers

#### SCA's operating context

The 2010 Metropolitan Water Plan:

- Makes the commitment that new infrastructure designed to increase transfers from Shoalhaven River and to protect the Southern Highland's river system will be operational by 2025. The plan identifies that the preferred augmentation option is a tunnel from Burrawang to Avon Dam.
- Continues the current rules for transfer of water from Shoalhaven River. These mean that when the 3-year ministerial moratorium ends in November 2011:
  - transfers commence when storages fall to 75% and continue until storages rise above 80%, and
  - water is drawn in times of higher flow in Shoalhaven River (ie, extraction ceases if Tallowa Dam is more than 1 metre below full storage). In severe drought, the plan allows the minimum operating level for transferring water from Tallowa Dam to Sydney to lower to minus 3 metres. SCA must cease water transfers from the Shoalhaven system when total system storages reach 80%.

#### Implications for SCA's pricing determination

In our past reviews of the potential costs associated with Shoalhaven pumping, when and if it were to occur has been a significant issue for SCA. In our 2 most recent price reviews, SCA has not been able to provide estimates of the forecast costs of Shoalhaven pumping (ie, SCA can provide costs when pumping occurs, but in forecasting future costs SCA has stated that it was not possible to accurately predict when pumping will be needed). SCA's system modelling can determine, on average, the volume to be pumped from Shoalhaven River, but in practice the average volume will fluctuate considerably depending on how often pumping occurs. The underlying issue is that when Shoalhaven pumping does occur, SCA incurs additional electricity and other costs in the order of $10m a year.[54] Therefore

54 SCA submission to IPART's *'Review of Metropolitan Water Agency prices'*, November 2004, p 27.

including average costs in prices would have the effect of overcharging customers unnecessarily and lead to excess returns when pumping is not needed.

In the 2005 Determination[55], due to the uncertainties of predicting when costs will occur, SCA argued for a cost pass-through mechanism for Shoalhaven pumping costs. Under the proposal, prices would be adjusted within the determination period in response to pre-specified trigger events. We noted at the time that the IPART Act, does not allow for the pass-through of uncertain costs without reopening the determination and therefore rejected the proposal. We did, however, allow for the potential reopening of the 2005 Determination in the event that there are significant changes in taxation, Government policy or regulatory obligations that give rise to costs or cost savings significantly greater than allowed for in the determination.

In the 2009 Determination[56], Shoalhaven pumping costs were less of an issue because of the:

- operation of the desalination plant for the 2-year proving period (until mid-2012)
- Ministerial moratorium on Shoalhaven pumping in place for most of the determination period (until November 2011) [57].

There was therefore a low probability that Shoalhaven pumping was to occur, so we decided not to provide a mechanism to adjust for the Shoalhaven pumping costs.

With the Ministerial moratorium to cease in November 2011, Shoalhaven pumping costs will be an issue for the 2012 Determination. Uncertainty about the expiration of the Ministerial moratorium and the probability of future transfers create revenue and cost risk. In particular, the recently released climate change study[58] has concluded that the role of SCA's Shoalhaven and metropolitan/coastal dams is likely to increase as its inland catchments get drier. As noted above, when pumping does occur, SCA incurs additional costs in the order of $10m a year.

In setting the price structure in this review, it may be possible to design a mechanism or methodology that could be included that would allow prices to increase to cover the costs of Shoalhaven pumping when transfers occur under the rules and meets the requirements of our Act. Such a mechanism or methodology would act like a scarcity price, ie, the price for water rises as dam levels fall. This is discussed in further detail in section 6.3.

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55 IPART, *Sydney Water Corporation, Hunter Water Corporation, Sydney Catchment Authority, Prices of water supply, wastewater and stormwater services, from 1 October 2005 to 30 June 2009 for the SWC and SCA- Final Determination and Report*, June 2005, p 23-24.

56 IPART, *Review of Prices for the Sydney Catchment Authority from 1 July 2009 to 30 June 2012 - Determination and Final Report*, June 2009, p 39.

57 Ministerial media releases, '*Sydney cuts reliance on Shoalhaven for drinking water* – Minister Phillip Costa MP – 7 November 2008, available from SCA's website: www.sca.nsw.gov.au

58 NSW Office of Water, *Climate change and its impact on water supply demand in Sydney*, Summary Report.

For this review, noting the uncertainties around Shoalhaven pumping and the IPART Act's limitations when including external factors in determinations, we request that SCA provides information on the probability that Shoalhaven transfers will occur, so that the materiality of the issues can be assessed and the pricing options and the notional revenue requirement at future efficient levels of costs can be developed. Shoalhaven pumping costs will also be considered as part of our discussions on scarcity pricing (see section 6.3).

### 6.1.2 Sydney Desalination Plant

#### SCA's operating context

With the operation of the Sydney Desalination Plant and various recycled water schemes, SCA is no longer the only water supplier to Sydney Water.

The Sydney Desalination Plant Pty Ltd operates under the *Water Industry Competition Act 2006* (WIC Act). The plant has been granted licences that govern its operations under the WIC Act. These licences establish the desalination plant Operating Rules specified in the 2010 Metropolitan Water Plan. In May 2011, the NSW Government declared the Sydney Desalination Plant Pty Ltd to be a monopoly supplier, pursuant to section 51 of the *Water Industry Competition Act 2006*. As such, we are undertaking a separate inquiry to determine the prices for the services provided by the Sydney Desalination Plant Pty Ltd for the period to 30 June 2017. Under the Terms of Reference for this review, we are required to develop a price structure where costs that vary with output are recovered from usage charges; and fixed costs are recovered from fixed charges.

#### Implications for SCA's pricing determination

Since the SCA is no longer the only water supplier for Sydney Water, its future water sales are more unpredictable than in the past. The desalination plant has capacity to supply up to 15% of Sydney's water needs but only operates intermittently, so SCA's forecast sales to Sydney Water are likely to be reduced and/or variable, potentially increasing its exposure to revenue risk.

The pricing structure for the Sydney Desalination Plant Pty Ltd to be determined through our review[59] may have implications for the amount of water that Sydney Water purchases from the SCA. We would welcome comments by the SCA and other stakeholders on the proposals to be put forward by Sydney Desalination Plant Pty Ltd.

[59] The NSW Government's Terms of Reference for this review requires Sydney Desalination Plant Pty Ltd to be "be financially indifferent as to whether it supplies water".

Other issues to arise from the operation of the Sydney Desalination Plant include:

- Until now SCA sales forecasts have been largely informed by our estimate of Sydney Water's sales to its customers. With the operation of the desalination plant and the new Metropolitan Water Sharing Plan for North Richmond, there are now mixed incentives for Sydney Water to over or underestimate its demand. As such, we may be required to reach a decision based on conflicting information.
- Notwithstanding the NSW Government's plans to lease the desalination plant, SCA has raised concerns that as the current owner of the desalination plant, Sydney Water could face an incentive to make water purchases from the desalination plant, even though dam water is a cheaper source of supply.

In summary, the Desalination Plant Operating Rules may raise the level of revenue risks for SCA (this will also be an issue for the Sydney Water price review). SCA is concerned that the operation of the plant will make sales, and hence revenue, more volatile than in the past. The question for this review is whether or not the operating rules do in fact increase the revenue risks for SCA. If so, there may be a case for adjusting SCA's price structure or introducing mechanisms to deal with such risks.

Under our current price structure to Sydney Water, SCA receives two-thirds of revenue from usage charges and one-third from fixed charges, making sales forecasts an important input for determining SCA's revenue requirement. If we were to increase the revenue received from fixed charges, SCA's exposure to revenue risk due to the desalination plant will reduce, as the risk is transferred to SCA's customers. We would need to consider what the appropriate structure of prices should be and who should bear the risk: SCA or its customers. Alternatively, there may be a case for introducing pricing mechanisms to deal with such risks (this is discussed in section 6.2).

### 6.1.3 Drought restrictions regime

#### SCA's operating context

Under the Metropolitan Water Plan, drought restrictions remain an important, effective and relatively low-cost tool for responding to future droughts.[60] The 2006 and 2010 Metropolitan Water Plans have made changes to Sydney's drought restrictions regime.

In summary, a number of 'water wise rules' have been introduced to encourage water conservation behaviour outside of drought periods. In addition, the 3 harshest levels of drought restrictions (Levels 3, 4 and 5) have been removed, in recognition of

[60] While recognising that drought restrictions impose some costs on the community (for example, inconvenience and adverse impacts on gardens and playing fields) and on some industries, the community consultation phase of the review of the 2006 Metropolitan Water Plan and recent surveys indicate a high level of support for drought restrictions (NSW Office of Water, *2010 Metropolitan Water Plan,* p 55).

the harsh community and economic impacts that would result from their implementation.

#### Implications for SCA's pricing determination

The key implication for SCA of the drought restrictions regime is the impact on sales forecasts that are used to determine prices. The exact timing for the future introduction of Level 1 and 2 drought restrictions will be influenced by Sydney's total dam storage level; the desalination plant; predicted weather patterns; the season; and demand forecasts. As with all forecasts, there is an inherent level of uncertainty that will make it difficult to predict the likelihood of drought restrictions and its impacts on sales.

At the time of the last price review, drought restrictions were a major factor affecting sales forecasts and revenue volatility. In this review, the impact of water restrictions on sales forecasts is likely to be lessened, with dam levels hovering around 75% and the extra supply from the Sydney Desalination Plant. Nevertheless, there is still a risk to sales forecasts as the likely impacts of drought restrictions remain uncertain. As discussed above, we could adjust SCA's price structure to recover a greater proportion of its costs from fixed charges, which would reduce SCA's exposure to sales risks due to drought restrictions. We could also include other mechanisms to address SCA's exposure to risk, such as a consumption variation mechanism or revenue volatility allowance, as discussed in Section 6.2.

### 6.1.4 SCA to release water for Sydney Water's extractions at North Richmond

#### SCA's operating context

Under the Greater Metropolitan Water Sharing Plan, due to commence on 1 July 2011, the continuation of Sydney Water's extractions at North Richmond is conditional on SCA releasing a comparable amount of water from Warragamba Dam when the Plan would otherwise require Sydney Water to cease to pump. In the past, SCA did not specifically release water to meet Sydney Water's extraction requirements at North Richmond. As such, Sydney Water was only required to pay water entitlement charges to the NSW Office of Water for this extracted water.

SCA intends to charge Sydney Water for water releases to supply Sydney Water's North Richmond plant. SCA has advised Sydney Water how much it will charge for released water, and this issue is under negotiation as part of the current review of the Bulk Water Supply Agreement.

### Implications for SCA's pricing determination

SCA will release around 7.7GL of water a year which it considers chargeable under the plan.[61] The question for this review is whether we determine a price for the release of water to supply the North Richmond Plant in this determination.

Assuming a decision is made to determine a charge for North Richmond releases, the next step is to consider the appropriate costs that the prices will recover. One particular question would be whether SCA would incur different costs that warrant setting a separate charge to that already paid by Sydney Water for its other water supply. If this is the case, SCA will need to provide an appropriate method for determining and allocating costs for this supply. To ensure consistency, the basis of charges for SCA's other customers (local councils, raw water and unfiltered customers), which was an outstanding issue from the 2009 Price Determination, will be relevant to this issue (see section 6.5).

We also need to consider how prices should be structured to recover the efficient costs of this supply. Should we apply the same fixed/variable ratio that we apply to Sydney Water for the other supplies that it receives from SCA (ie, two-thirds of revenue from usage charges and one-third from fixed charges)? If we maintain this approach, we will also need to determine forecast sales for the North Richmond supply. Again, the fixed/variable charge needs to balance the need for revenue certainty for SCA, and who is best able to deal with such risks.

IPART seeks information and explanation from SCA on:

17 The probability of it commencing transfers of water from Shoalhaven River.

18 Whether the Desalination Plant Operating Rules increases revenue risks, and if so, its suggested mitigation tools.

19 The possible implications for the SCA of the price structure to be proposed by Sydney Desalination Plant Pty Ltd.

20 The potential for imposing water restrictions and impacts on sales forecasts.

21 Sales forecasts to Sydney Water, including a breakdown of sales forecasts for supplying the North Richmond plant.

22 The costs associated with water supply for the North Richmond plant, and if they differ from the other water supplied to Sydney Water.

IPART seeks comment on the following:

32 How should prices incorporate costs due to Shoalhaven pumping?

33 The possible implications for the SCA of the price structure to be proposed by Sydney Desalination Plant Pty Ltd.

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61 NSW Office of Water, *Draft Water Sharing Plan, Greater Metropolitan Region unregulated river water sources*, Background document, p 34.

34 How should we set a charge for the water released by SCA for Sydney Water's extractions at North Richmond?

## 6.2 How should we adjust SCA's prices to deal with risk?

In past determinations, we have considered various options for dealing with risks associated with forecast sales. For example, in the 2005 Determination[62], we decided to include an option for adjusting SCA's revenue requirements in subsequent determination periods where variations between forecast and actual sales were outside a 'deadband' of +/-10%.

We also considered submissions from SCA to develop a methodology to pass-through costs associated with Shoalhaven pumping. In the 2005 and 2009 Determinations, we decided not to include mechanisms to address sales forecast risks or costs associated with Shoalhaven pumping.

Given the discussion in section 6.1 regarding the changes to SCA's operating environment that could increase its revenue risk (eg, Desalination Operating Rules), there may be a case for considering mechanisms to mitigate risk. Examples of such mechanisms might include SCA's price structure or mitigating the impact of these risks on SCA's financial viability. Potential approaches for dealing with risks, if considered necessary, are discussed below.

### 6.2.1 The fixed/variable ratio for the recovery of costs

The theoretical rationale for SCA's current price structure for Sydney Water is not strong. At present, 67% of revenue is recovered from the variable charge and 33% from the fixed charge. Given SCA has argued in the past that its costs are mostly fixed, and recent changes to revenue risks (discussed above), there may be an argument to increase the fixed-charge revenue component.

In the 2005 Determination[63], we changed the balance between SCA's fixed charge and its volumetric (per ML) charge to Sydney Water. We increased the relative size of the volumetric charge so that by 2008/09, two-thirds of SCA's revenue came from volumetric charges. Prior to this, we set SCA's prices so that it earned approximately equal revenue from its fixed and volumetric charges. We made this change to help achieve the objective of setting charges with reference to SCA's long-run marginal cost of supply. It also sent a price signal to Sydney Water, to help achieve the State Government's demand management objectives.

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62 IPART, *Sydney Water Corporation, Hunter Water Corporation, Sydney Catchment Authority, Prices of water supply, wastewater and stormwater services, from 1 October 2005 to 30 June 2009 for the SWC and SCA - Final Determination and Report*, June 2005, p 21.

63 IPART, *Sydney Water Corporation, Hunter Water Corporation, Sydney Catchment Authority, Prices of water supply, wastewater and stormwater services, from 1 October 2005 to 30 June 2009 for the SWC and SCA- Final Determination and Report*, June 2005, p 100.

In the 2009 Determination, we decided not to change the balance between volumetric and fixed charges[64]. This was considered to be a reasonable 'holding' option for the 2009 Determination period, given the uncertainties associated with SCA's operating environment (as discussed above). With the potential for continued revenue volatility associated with consumption forecasting and medium-term price setting, including further uncertainty around SCA's operating context, the question for this review is whether the above developments warrant a change in balance of the volumetric and fixed charges.

### 6.2.2 Consumption variation mechanism

As discussed in Chapter 5, water sales forecasts by water businesses over the determination period are used to set prices to generate the determined revenue requirement.

In the 2005 Determination[65], we adopted a mechanism to address the risk to an agency from variations between forecast and actual water sales (consumption). This mechanism provided an option for making price adjustments in the subsequent determination where the variation was outside a deadband of +/-10%. We considered that a deadband lower than 10% transferred too much business risk to customers, and was inappropriate in the incentive-based regime applicable to the water industry. We also noted at the time that we would consider adjusting SCA's 2009 Determination revenue requirement to account for any unspent monies allowed for the Shoalhaven Transfers Scheme[66] in the 2005 Determination. This was due to significant uncertainty about the timing and level of SCA's forecast capital expenditure on the Shoalhaven Transfer Scheme.

While these options were available, they were not activated because the sales forecast variation was more than offset by the revenue due to the under-spend on capital expenditure. That is, SCA generated $30m in revenue on capital expenditure for the Shoalhaven Transfers Scheme that it did not actually incur. This was offset by a shortfall of approximately $57m in water sales revenue (some $14m of which relates to variations greater than the 10% band).

In the 2009 Determination[67], we did not include a consumption adjustment mechanism. At the time, we considered that the uncertainty about water availability caused by drought had lessened and that, with the commissioning of the desalination

64 IPART, *Review of Prices for the Sydney Catchment Authority from 1 July 2009 to 30 June 2012 - Determination and Final Report*, June 2009, p 84.

65 IPART, *Sydney Water Corporation, Hunter Water Corporation, Sydney Catchment Authority, Prices of water supply, wastewater and stormwater services, from 1 October 2005 to 30 June 2009 for the SWC and SCA - Final Determination and Report*, June 2005, p 21.

66 The Shoalhaven Transfers Scheme involved increasing the capacity of Tallowa Dam (through the installation of radial gates) and constructing new transfer conduits, to increase the yield from Shoalhaven River to Sydney (NSW Government, *2006 Metropolitan Water Plan*, p 84).

67 IPART, *Review of Prices for the Sydney Catchment Authority from 1 July 2009 to 30 June 2012 - Determination and Final Report*, June 2009, p 38.

plant, supply was relatively certain in the 2-year commissioning period, which comprised most of the determination period.

Since that time, timing rules for full-scale production of the plant have been set in relation to dam storage levels. These rules have implications for predicting future SCA sales. Actual water sales for each of the past 5 years are below forecast. In the 2010/11 financial year, actual sales were below forecast by around 4%; this is likely to increase to 5% this financial year, due to the desalination plant's impact on sales.[68]

For this review, we will consider whether a sales-risk adjustment mechanism should be included in the 2012 Determination and evaluate available mechanisms. In doing so, we will consider potential incentives for SCA and implications for water prices (and hence consumer welfare). It is important to note that if an adjustment mechanism acts to guarantee revenue, it may reduce a utility's incentives to adequately plan and invest to avoid or mitigate potential supply and demand imbalances.

### 6.2.3 Revenue volatility allowance

An alternative mechanism for addressing sales-related revenue risk could be to include a revenue volatility allowance as an additional cost component to the building-block approach. This would allow SCA to recover the holding costs required to borrow funds to conduct business in years of revenue shortfalls. This would reduce SCA's exposure to revenue risks.

We introduced a revenue volatility allowance in the 2010 State Water Determination.[69] This approach was considered to be the most cost-effective option for dealing with State Water's revenue risks (which are similar to those faced by SCA), compared to alternatives such as insurance or regulatory adjustment mechanisms (eg, trigger events and ex-post adjustments, as discussed above). Under this approach, we used a measure to estimate revenue volatility over a period of time, and formed a cost block from the rate of return on the costs, which was then added to State Water's revenue requirement.

Given that there is regulatory precedence for including a revenue allowance as part of the building blocks, we are considering whether such an approach is appropriate for addressing SCA's revenue risk.

68 As advised by SCA at a Quarterly Meeting held on 12 May 2011.

69 IPART, *Review of bulk water charges for State Water Corporation from 1 July 2010 to 30 June 2014*, Final Report, June 2010, p 43.

### 6.2.4 Cost pass-through mechanisms to address risks associated with any unforeseen costs

In the 2005 Determination[70], we considered whether to introduce a mechanism to deal with material cost changes due to non-controllable external events, such as those relating to regulatory, licence or government policy obligations. We decided against introducing such a mechanism.

Under the IPART Act, we can either set the maximum price or set a methodology for setting the maximum price for monopoly services. The Act does not allow us to vary or amend that price or methodology during the determination period. If circumstances require a variation to a determination, IPART must make a new determination. The Act does allow us to include a cost pass-through mechanism in a determination period if it can be defined in a methodology that is consistent with the Act.

In the case of the 2005 Determination, if we had permitted such a cost pass-through mechanism the costs identified would have been passed through without any scrutiny by IPART. This is because once the relevant event triggers the cost pass-through mechanism, the costs would be passed through under the methodology. We are naturally cautious about the nature of expenditure that might be passed-through under such a mechanism and the extent to which it has been reviewed by us or another appropriate party.

Further, in the 2005 Determination we did not have information on the probability of Shoalhaven pumping occurring that would have allowed us to develop a mechanistic formula for the pass-through of these costs consistent with the requirements of our Act.

We introduced a cost pass-through mechanism for Sydney Water in our 2008 Sydney Water Determination.[71] However, this was for changes to SCA's water charges, which were reviewed and determined by us in the 2009 Determination. The 2012 SCA Determination is being conducted simultaneously with the Sydney Water Determination so that SCA's water costs to Sydney Water can be considered at the same time. This removes the need for a cost pass-through for these costs in the 2012 SCA Determination.

IPART seeks information and explanation from SCA on:

23 The need and basis for including price adjustment mechanisms to address risks faced by SCA.

24 SCA's proposal for addressing revenue risks.

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70 IPART, *Sydney Water Corporation, Hunter Water Corporation, Sydney Catchment Authority, Prices of water supply, wastewater and stormwater services, from 1 October 2005 to 30 June 2009 for the SWC and SCA - Final Determination and Report*, June 2005, p 23.

71 IPART, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater and other services, from 1 July 2008 - Determination and Final Report*, June 2008, p 24.

IPART seeks comment on:

35 The need for, and form of, other mechanisms to deal with risk throughout the determination period.

36 The need for, and form of, a revenue volatility adjustment mechanism for SCA over the upcoming determination period.

## 6.3 Scarcity pricing at the wholesale level: pros and cons?

During the 2008 and 2009 Sydney Water and SCA pricing reviews, we considered the potential for introducing a form of scarcity pricing at retail and wholesale levels. While we ruled out 'scarcity pricing' at retail level in the 2008 Sydney Water Determination[72], in the 2009 SCA Determination[73] we noted we were potentially interested in developing and implementing a form of wholesale scarcity pricing as part of our 2012 Determination. We identified that SCA should conduct further investigation around the practicalities of introducing an administrative scarcity price and request that, as part of SCA's submission to this review, it provides evidence of its progress and its views on this.

Under a wholesale scarcity-pricing approach, we would set the price of water from SCA's dams to vary inversely with dam levels (available supply), reflecting the value of SCA water under prevailing conditions. SCA's prices to Sydney Water would rise when dam levels fall (when dam water is scarce); and fall when dam levels rise (when dam water is plentiful).

### 6.3.1 Why are we considering scarcity pricing?

The key drivers for reform in the water industry are security of supply and drought response. In this context, balancing supply and demand has both a long-term and short-term perspective. The relative roles of restrictions and pricing should be seen in this context. Restrictions are not the solution to long-term imbalances in demand and supply. However, they have strong community support, particularly for use as a short-term response to drought.[74]

Scarcity pricing is mooted as either an alternative to water restrictions aimed at managing short-term water scarcity due to drought (eg, Grafton[75]) or as a supplement to restrictions (eg, Frontier Economics[76]).

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72 IPART, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater and other services, from 1 July 2008 - Determination and Final Report*, June 2008, p 87.

73 IPART, *Review of prices for the Sydney Catchment Authority from 1 July 2009 to 30 June 2012 - Determination and Final Report*, June 2009, p 132.

74 NSW Government, *Updating the Metropolitan Water Plan, community views – summary of findings from Phase 1 of consultation*, p 2.

75 Grafton Q and M Ward, 2007, *Prices versus rationing: Marshallian surplus and mandatory water restrictions*. Canberra: ANU.

76 Frontier Economics, *Efficient water resource pricing in Australia: an assessment of administered scarcity pricing in urban areas,* Waterlines report Series No 44, April 2011.

Scarcity pricing could be introduced solely at wholesale level or at both wholesale and retail levels. If introduced solely at wholesale level (ie, SCA's prices to Sydney Water), it would create incentives for Sydney Water to source alternative supplies and/or pursue demand-side options, including reducing leaks and encouraging improved water use efficiency. At present, in the absence of restrictions, there are strong financial incentives for Sydney Water to sell more water without considering short-term supply shortages.

It is noted that there are significant transaction costs to introducing scarcity pricing at retail level. In our 2008 Sydney Water Determination[77], we examined the pros and cons of introducing scarcity pricing at retail level and decided not to implement it. At that point, we noted that while scarcity pricing may be considered more economically efficient because water is allocated to its highest value uses, water restrictions appear to have broad community acceptance and are more effective at managing short-term supply and demand imbalances.

Therefore, in this review we are considering the practicalities and basis for introducing a scarcity price at the wholesale level. Scarcity pricing at the retail level is an issue that is relevant to our separate review of Sydney Water's prices.

We note that since the 2009 review, debate about the role, contribution and potential effectiveness of scarcity pricing at wholesale level has continued. However, to this point it has not been implemented.

As part of this debate, the National Water Commission has commissioned a report from Frontier Economics[78] that sets out a number of different models for the introduction of scarcity pricing. These models offer a more concrete basis for considering scarcity pricing, and are discussed in more detail below.

### 6.3.2 How could scarcity pricing at the wholesale level work?

The idea behind administered scarcity pricing is to establish meaningful price signals to water users and suppliers. Setting prices for water that accurately reflect its underlying scarcity is more closely aligned to market pricing for most goods and services (where prices adjust to balance supply and demand). This contrasts to our current approach to pricing, where we set prices to recover the costs of underlying infrastructure and operation (ie, long-run marginal cost), not the underlying value of water (ie, short-run marginal cost). Commentators argue that this leads to inefficient use (or non-use) of water.

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77 IPART, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater and other services, from 1 July 2008 - Determination and Final Report*, June 2008, p 87.

78 Frontier Economics, *Efficient water resource pricing in Australia: an assessment of administered scarcity pricing in urban areas,* Waterlines report Series No 44, April 2011, p 39.

### Potential options for the introduction of scarcity pricing

Frontier Economics[79] has suggested that since scarcity pricing was first proposed, there have been major changes to the urban water market and its management that would allow scarcity pricing, as one of several policy instruments, to efficiently balance supply and demand over the short and longer term. These changes include major investments in non-rainfall dependent sources of water supply, a shift in policy focus away from reliance on restrictions, and an emerging debate about the scope for differentiated water-supply products and pricing. There is also a new awareness around the need for institutional arrangements and policy settings to secure water supplies in a time of climate change and rapid population growth.

In this context, Frontier Economics[80] has outlined 5 broad approaches for setting a wholesale volumetric scarcity price. Of the 5 approaches, we consider the following 3 approaches could be applied to SCA[81]:

1. **Drought surcharge.** A wholesale business could apply a drought surcharge whereby the volumetric price increases when dam levels fall to a specified level (eg, 50%), so that the charge offsets the reduction in revenue from water sales. This could be applied in relation to SCA's Shoalhaven pumping costs.
2. **Setting prices to reflect the marginal cost of alternative supply and demand options triggered by falling dam levels.** Governments may define operating rules for supply and demand management options (such as desalination and water restrictions) based on dam level triggers. A wholesale scarcity charge could be set to reflect the marginal cost of alternative options, triggered as a proxy for the opportunity cost of dam water.
3. **Using economic modelling to calculate a dynamically efficient price for urban supplies.** The regulator or water business could potentially apply economic modelling techniques to define optimal prices for wholesale water (ie, dam water) based on water availability (such as current storage levels, demand forecasts and the range of expected future inflows), as well as expected policy constraints and planned investments.

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79 Frontier Economics, *Efficient water resource pricing in Australia: an assessment of administered scarcity pricing in urban areas,* Waterlines report Series No 44, April 2011, p vii.

80 Frontier Economics, *Efficient water resource pricing in Australia: an assessment of administered scarcity pricing in urban areas,* Waterlines report Series No 44, April 2011, p 39.

81 The other options proposed by Frontier Economics include: setting a scarcity price based on rural markets and setting prices to achieve an equivalent reduction in demand to water restrictions. The first option is not applicable, as urban/rural water trade in the SCA's context would not be viable. The second option is less applicable at wholesale level because end-customers face retail rather than wholesale price.

Table 6.1 provides a summary of Frontier Economics' assessment of scarcity pricing at the wholesale level. Frontier Economics assessed scarcity pricing at the wholesale level according to the following criteria: economic efficiency, effectiveness, revenue adequacy, customer impact, administrative simplicity, institutional impediments and transparency. The extent to which the benefits and costs are incurred depends on the option adopted.

**Table 6.1 Frontier's assessment of the usefulness of scarcity pricing at wholesale level**

| Criteria | Frontier's assessment |
|---|---|
| Allocative and dynamic efficiency | ▼ Results in efficient prices – incentives to Sydney Water to invest and choose least-cost water source<br>▼ Outcome depends on approach and estimate accuracy for water opportunity cost |
| Effectiveness | ▼ Provides incentive to reduce its customers' demand<br>▼ Restricted due to supply operating rules<br>▼ Depends on extent to which retail businesses base sourcing and investment decisions on commercial grounds |
| Revenue adequacy/stability | ▼ Reduces risk of under-recovery, with potential for over-recovery of business'-efficient infrastructure costs<br>▼ Can generate excess revenue above efficient infrastructure costs<br>▼ Raises questions about what to do with this revenue |
| Customer impact | ▼ Transfers financial risk to retailer |
| Administrative simplicity/practicality | ▼ Communicating complex pricing regime; financial implications; absence of hardship conditions<br>▼ More effective at wholesale level |
| Institutional impediments | ▼ Government-defined operating rules impact on its usefulness<br>▼ Would ideally involve reducing reliance on prescriptive regulations and operating rules that constrain the retailers' ability to balance supply and demand at least cost |
| Transparency | ▼ Requires assumptions about the value of water; this is no different to assumptions required under current approaches to pricing |

**Source:** Frontier Economics, *Efficient Water Resourcing in Australia: an assessment of administered scarcity pricing in urban areas*, Waterlines Report series No 44, April 2011, p 42.

Frontier Economics' analysis supports the introduction of scarcity pricing, suggesting that as an initial step, a simple and transparent approach could be adopted within the confines of the existing system operating rules. In the longer term, the approach can be improved to more accurately reflect the efficient price, which would ultimately depend on the development of workable urban water markets.

### 6.3.3 Our preliminary thoughts on the benefits and costs of introducing scarcity pricing

Following on from Frontier Economics' analysis of scarcity pricing, the fundamental question in considering whether to implement these options, is whether the benefits of a scarcity pricing approach outweigh its costs. Our preliminary thoughts on the benefits and costs of introducing a scarcity pricing regime are discussed below.

#### Benefits

Assuming that there is a water market, the benefits of introducing a price for SCA water which takes account of dam levels has potential to:

- Provide Sydney Water with the cost of various water supplies based on prevailing conditions. This will help ensure it obtains its necessary water supply from the least cost combination of sources (ie, the optimal mix of desalination, recycled, Shoalhaven transfers and dam water).
- Provide Sydney Water with incentives to invest in additional water conservation and demand management measures, where efficient.
- Provide signals to potential new suppliers of water. For instance, if water prices reflect dam levels and dam levels are relatively low over a sustained period, average water prices will be higher, which may provide an incentive for new water suppliers to enter the market.
- Highlight where investment to increase water supplies is required. If investment takes place, water scarcity will be reduced in the future. If an optimal investment plan takes place, very high prices will be unusual even under a scarcity-pricing approach.
- Reinforce the impact of water restrictions, or defer or avoid the need for more severe restrictions. For instance, if variations in SCA's prices are not passed through to retail prices, Sydney Water will have an incentive to effectively implement and enforce drought restrictions. This will minimise its exposure to high SCA prices during periods of low dam levels and encourage long-term investment in drought-resistant supply options such as recycled water.
- Mitigate sales risk to SCA. Presently, if SCA's sales are less than forecast when setting its volumetric price (eg, due to the effect of higher than forecast restriction levels in reducing water demand), it is at risk of under-recovering its revenue requirement – particularly as its costs are mostly fixed. By preventing Sydney Water passing these variations in SCA's prices onto its retail customers, the risk is shifted from SCA to Sydney Water.

### Costs

As outlined above, the extent of the benefits of scarcity pricing depends on the operation of a wholesale market. For example, SCA has indicated that barriers to its participation in wholesale market operation would need to be addressed before it would support introducing wholesale scarcity pricing.

Other significant practical issues with the implementation of scarcity pricing include:

- A likely lack of water scarcity in Sydney in the short to medium term, due to increases in water recycling, investment in demand management measures, uncertainties surrounding costs and supply from the desalination plant, and recent rises in dam levels. This may mean it is not appropriate to implement scarcity pricing at this time.
- The allocation of risk arising from any new water pricing arrangements requires:
  - Examining the level of SCA's fixed charge to Sydney Water and how frequently this charge should be adjusted, taking into account SCA's revenue requirement (or building block costs) and intention of the scarcity pricing approach to provide a price (or cost) signal to Sydney Water.
  - Managing any variations between SCA's revenue under a scarcity-pricing model and its actual revenue requirement using mechanisms such as an 'unders and overs' account. We note that any viable pricing option must allow SCA to recover the efficient costs of meeting the community's service and environmental standards.
- Pricing based on long-run marginal costs may be a reasonable approximation of scarcity pricing most of the time, if investment plans are broadly optimal. Therefore it may not be necessary to incur the administration and other costs of introducing scarcity pricing.
- How frequently prices need to be changed to reflect dam levels. Sydney's dams can fill rapidly, following a significant rainfall event (such as in 1998, when dam levels increased significantly over several weeks). Under a scarcity pricing approach, this could lead to sudden price drops. This price volatility could undermine water conservation measures, investment in other water supply sources and other potential benefits of a scarcity pricing approach. In any case, we consider that to manage price volatility, wholesale prices that reflect medium- to long-term average dam levels may (while dampening the price signal to some extent) have advantages over a more responsive or volatile 'spot' price.

IPART seeks information and explanation from SCA on:

25 Its views on the introduction of wholesale scarcity pricing, the barriers to the implementation of a water market, and how it would work in practice.

IPART seeks comment on:

37 The appropriateness of introducing scarcity pricing at the wholesale level, and the various costs and benefits of implementing such a pricing regime.

38 Which of the 3 models proposed by Frontier Economics should be implemented?

## 6.4 How do we address the size of SCA's long-term capital works program and impacts for customer affordability?

As discussed in section 2.2.5, a key implication of the 2010 Metropolitan Water Plan is that it commits SCA to 3 significant capital works programs over the next 10 to 15 years. The size and timing of these capital works programs could affect the affordability of water for Sydney Water customers. While the level of forecast capital expenditure is a concern for pricing outcomes, this is compounded by the 'lumpy' nature of the capital expenditure. There are 3 particular issues that we will consider as part of this review:

- Assessing the prudence and efficiency of the upcoming capital expenditure projects that were foreshadowed in the 2010 Metropolitan Water Plan. This includes project timing and priorities to ensure optimal water outcomes for consumers.
- Examining alternative capital incentive mechanisms to address asymmetrical engineering and efficiency information.
- Considering depreciation modifications to account for intergenerational equity concerns, given the size of SCA's forecast capital program and the long-life benefits of this infrastructure.

These issues are discussed in more detail below.

### 6.4.1 SCA's foreshadowed capital works program

SCA is committed to the following capital projects:

- rehabilitation/replacement of the Upper canal
- environmental flow infrastructure for Warragamba Dam
- upgrades to Shoalhaven transfers.

Indicative estimates of the impact of these major capital commitments show that there will be significant cost implications over future determination periods with increased expenditure towards the end of the upcoming determination period. In fact, early estimates show that SCA's forthcoming capital expenditure has a similar value to its current regulatory asset base with some annual capital expenditure of almost 10 times the current levels.

### 6.4.2 Prudence and efficiency of foreshadowed capital expenditure

Due to the size of the forecast capital expenditure, SCA's regulatory asset base will double over a short period. This will have significant cost and revenue implications towards the end of the 2012 determination period. It is therefore important that decisions to invest satisfy a cost-benefit analysis and that the timing and priority of programs are reasonable and appropriate.

Our standard approach to price setting considers the prudence and efficiency of SCA's capital expenditure over the previous and forthcoming determination periods before allowing costs to be included in its asset base, and therefore recovered through prices (see Chapter 5).

We have recently improved our approach to the capital expenditure review to place more emphasis on a 10-year strategic review (and beyond) of SCA's planning and systems. For SCA, this entails a more detailed and focused review of its planning and approach, examining specifically the prudence and efficiency of major capital works programs included in the 2010 Metropolitan Water Plan. Based on all available information, the review will look at the level and timing of capital expenditure, whether decisions to invest are reasonable and appropriate, and whether the decision-making process is robust (eg, cost-benefit and options analysis). The outcomes of such analysis will determine whether efficient costs will be included in the regulatory asset base and recovered through prices.

### 6.4.3 Capital incentives to enhance forecast accuracy and efficiency gains[82]

Currently, SCA provides us with its forecast of efficient capital expenditure and we review this through a bottom-up analysis, using engineering expertise to identify an adjustment for achievable efficiencies. Any efficiency gains made by SCA above those set at the beginning of the regulatory period are retained by SCA until the end of the determination period. At the end of this period, we reset SCA's regulatory asset base so that the gains are passed onto customers.

A common criticism of this approach is that it encourages the regulated agency to submit a conservative set of costs without focusing on forecast accuracy or scope for efficiency gains. The regulator selects efficient capital expenditure with incentives for forecast accuracy and cost savings. UK regulators for electricity and gas (Ofgem), and water (Ofwat) have recently introduced 'menu regulation', which aims to combine incentives for companies to accurately forecast capital expenditure *ex ante*, while spending it efficiently *ex post*.

82 IPART is due to release a staff working paper that covers this issue, see, Mahoney, D, Jorgensen, C and Clay T, *Incentives for cost saving in CPI-X regimes*, IPART Working Papers, June 2011, available from our website, www.ipart.nsw.gov.au.

Menu regulation allows companies to choose a different level of efficient capital expenditure to the amount identified by the regulator. Menu regulation combines specific incentives to forecast as accurately as possible and to make efficiency gains, so the agency responds better than its forecast. In general, the parameters of the menu are set to be incentive compatible in the sense that each company submits capital expenditure proposals that best reflect its view of its capital expenditure requirements. The lower the level of capital expenditure submitted, the higher the incentive, and vice versa.

So far, evidence from the UK water and energy sectors as to whether this approach has been more successful than the standard approach is very limited. However, relative to our current approach, menu regulation is more likely to be successful where there are a large number of companies within the sector for which an appropriate menu can be developed. Further, in the UK, menu regulation has often applied to companies rather than government-owned businesses, so mechanisms may need to be put in place for the managers of government-owned businesses to respond to the incentives.

The question for this review is whether alternative mechanisms, such as one of the many elements of the menu regulation approach, could offer tools that assist in addressing the information asymmetry problem associated with SCA's large capital expenditure program.

### 6.4.4 Adjusting prices due to intergenerational equity/customer impact concerns

The level and timing of SCA's long-term capital program has implications for our pricing decisions. While capital expenditure is usually lumpy, the lumpiness of SCA's future capital expenditure programs is more pronounced. If no adjustment is made to recover these capital costs, there are likely to be significant increases in SCA's prices leading to price shocks for Sydney Water and its retail customers. This would raise concerns under section 15 of the IPART Act which specifies that we must consider the impacts on customer affordability, including intergenerational equity considerations.

As a general rule, we seek to recover the costs of capital projects from users proportionate with the benefit they receive or the value they derive from those projects. We also consider the timing of the recovery of those costs, and whether this matches the timing of the users' receipt of benefits or value.

If we were to follow our normal building block approach, we would recover the capital costs as they are expended. Under SCA's capital expenditure profile, this potentially means that there would be substantial increases in prices for current customers that are not in proportion to the benefit they receive over the upcoming determinations. Therefore, it may be appropriate in this case to consider an alternative approach to recovering capital costs that has been deemed prudent and efficient.

In our 2009 Determination for Hunter Water[83], we developed an alternative approach for recovering costs associated with Tillegra Dam. We considered this approach more appropriately balanced dam costs and benefits for current and future customers, while ensuring Hunter Water recovers the full efficient investment costs over the dam's lifetime. We specified that the dam's efficient costs would be recovered over more than 1 determination period, in line with benefits customers receive from the dam.[84] This ensures intergenerational equity, while alleviating the cost burden on current customers.

Other regulators that have deferred recovery of capital expenditure costs include:

- The Commission of Energy Regulation (Ireland), which made a draft decision to defer recovering regulatory depreciation from the under-utilised gas interconnector pipeline between Ireland and Scotland, to allow a short-term reduction in revenues recovered without stranding the asset.
- The Australian Competition and Consumer Commission, which made the decision that under-recovered revenue from the Central Ranges Pipeline Access Arrangements was permitted to be capitalised into the capital base and recovered in future arrangements.

These decisions show that economic regulators can and do use a variety of approaches and treatments when confronted with the need to balance revenue requirements with customer affordability and intergenerational equity for large assets with initially under-used capacity. The question for this review is whether a similar approach may be required in the 2012 Determination or identified for application in the next determination.

IPART seeks information and explanation from SCA on:

26 The systems, planning, approach, robustness of decision-making processes, prudence, efficiency, timing and prioritisation of different project phases to ensure optimal outcomes for customers and lumpiness minimised over the expenditure profile.

27 Configuration, resources and management systems of SCA and the extent to which these could be optimised having regard to effectiveness and efficiency.

28 Consideration of alternative options to achieve SCA's objectives and service delivery.

IPART seeks comment on:

39 Whether SCA's capital expenditure programs is reasonable and efficient.

40 Are there alternative capital incentive mechanisms, such as the menu regulation approach, that we should consider implementing to address information asymmetry around SCA's capital expenditure program.

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83 IPART, *Review of prices for water, sewerage, stormwater and other services for Hunter Water Corporation - Determination and Final Report*, July 2009, p 37.

84 IPART deferred the recovery of $31m ($2008/09) of the efficient cost to be recovered. This amount, together with holding costs, will be recovered through future prices.

41 Whether prices need to be adjusted to account for the impact of capital expenditure on prices and intergenerational equity.

## 6.5 The basis of charges for local government, raw and unfiltered water customers and North Richmond supply

The review will consider 3 issues related to the charging structure for services to SCA's different customer bases. These include:

- the costs of supplying water to local councils and the basis for proposed prices to these customers
- the cost of supplying unfiltered water and raw water to retail customers and the basis for proposed prices to these customers
- the costs of supplying water to North Richmond and the basis for proposed prices for this purpose.

The first 2 issues are outstanding issues from the 2009 Determination that we have identified as requiring further investigation by SCA. The third issue arises from the Greater Metropolitan Water Sharing Plan, (as discussed in section 2.2.6), which establishes an expectation that the SCA will release water to meet Sydney Water's extraction requirements for North Richmond in certain circumstances. These issues are discussed below.

### 6.5.1 The costs of supplying water to local council customers

SCA currently levies local councils a volumetric charge only. Since the 2005 Determination we have decided to transition SCA's volumetric charges to cost-reflective pricing. This was to ensure that water charges were increased in an orderly manner to a similar level as Sydney Water's charges.

In its submission to the 2009 Price Determination, SCA was unable to provide a robust rationale to support its proposed prices to local councils or to identify costs. As a result, we decided to increase prices to local councils in line with SCA's increasing costs and revenue requirement. However, the determination still maintains a relatively small differential (around 5.5%) between SCA's volumetric prices to local councils and to Sydney Water.[85] To address this issue and inform our decisions for the 2012 Determination, we requested that SCA investigates the costs and rationale for the structure and level of these supply prices. This investigation has been completed and is expected to be included in SCA's submission.

85 IPART, *Review of prices for the Sydney Catchment Authority from 1 July 2009 to 30 June 2012 - Determination and Final Report*, June 2009, p 90.

### 6.5.2 The costs of supplying unfiltered water and raw water customers

SCA also supplies water to about 65 smaller raw water and unfiltered water retail customers[86], who have direct off-takes from pipelines, canals and storages. Unfiltered water customers pay a fixed and usage charge, while raw water customers only pay a usage charge. As above, SCA was unable to justify the prices to unfiltered and raw water customers. In the 2009 Determination, we requested that SCA conducts further analysis for the basis of these charges to inform our decisions for the 2012 Determination. This analysis has been completed and is expected to be included in SCA's submission.

### 6.5.3 Costs of supplying water to North Richmond

The Greater Metropolitan Water Sharing Plan was gazetted on 3 March 2011 and will commence on 1 July 2011. Sydney Water currently draws water for its North Richmond plant from Hawkesbury River and only pays water entitlement charges to the NSW Office of Water. The Water Sharing Plan assumes that extractions at North Richmond will be supported by releases from SCA's Warragamba Dam in some circumstances.

SCA has advised Sydney Water of the price it would charge for released water. It is expected that SCA will recommend we determine a price for its release of water to supply the North Richmond plant.

This will be similar to determining the charges applied to local councils and unfiltered and raw water customers. The question is whether there is a basis for charging Sydney Water a different price for the water released for its North Richmond supply.

## 6.6 Should costs associated with activities that are not directly related to the delivery of services be recovered from users?

SCA manages an extensive range of assets subject to the heritage management obligations and infrastructure required for environmental water release (rather than for provision of water services to paying customers). While such investments may be consistent with the efficiency and prudence test, they have a negative impact on the productivity of SCA and, in the case of heritage obligations, may not have been subjected to cost-benefit analysis.

An issue for this review is whether these costs should be included in SCA's prices and recovered from water users, or whether these activities are undertaken by the Government on behalf of the community, and should therefore be recovered from the taxpayer. That is, whether the 'impactor pays' principle is being appropriately

86 IPART, *Review of prices for the Sydney Catchment Authority from 1 July 2009 to 30 June 2012 - Determination and Final Report*, June 2009, p 8.

applied to SCA's costs. The impactor pays principle allocates the efficient cost of monopoly activities to the water user and identifies the costs that should be paid by the Government in recognition of the public good components of the activity. This approach is applied in a transparent and repeatable way in recent determinations for the NSW Office of Water[87] and State Water.[88]

SCA incurs costs for the operating and maintenance costs of heritage assets. This obligation is placed on SCA by the Government and these costs are currently included in SCA's prices and recovered from water users. It could be argued that the need to incur the cost was created by the Government and not the water user. Therefore, it may be appropriate to exclude these costs from SCA's prices and recover them through other mechanisms, such as a Community Service Obligation (CSO). We will investigate the significance of costs associated with SCA's heritage obligations and whether the approach to recovering these costs needs to be consistent with the impactor pays principle.

A similar question could be raised with regard to other non-commercial activities SCA undertakes for the Government, such as capital investments to facilitate environmental flows and removing weirs owned by SCA. For example, the Metropolitan Plan commits SCA to major investment at Warragamba Dam, to release environmental flows. To date, infrastructure for environmental flows and the operating costs incurred are currently contained in SCA's operating costs and recovered from users. However, as noted above, in other areas of IPART regulation, costs associated with environmental flows that have community-wide benefits are borne by the wider community through payments by the Government to State Water.

Therefore, a question for this review is whether the environmental costs from various projects such as environmental flows should be recovered from users (as is currently the case) or whether some of these projects have benefits to the wider community and should therefore be allocated as the Government's share.

IPART seeks information and explanation from SCA on:

29 The size and significance of heritage-asset obligations and other non-commercial activities on operating and capital costs.

IPART seeks comment on:

42 Whether SCA's prices should recover costs associated with SCA's heritage assets and other non-commercial obligations such as capital works for environmental flows and heritage purposes.

87 IPART, *Review of prices for the Water Administration Ministerial Corporation for the NSW Office of Water from 1 July 2011*, February 2011.

88 IPART, *Review of bulk water charges for State Water Corporation from 1 July 2010 to 30 June 2014 – Final Report*, June 2010.

# Appendices

# A Summary of proposed amendments to operating licence

| Licence Clause | | Proposed amendment | Issues Paper reference (section) |
|---|---|---|---|
| 1 | **Information about the Licence** | | |
| 1.1 | Purpose of the Licence | General administrative changes and reworking to improve readability. Consider removing or rewording to the extent that the requirement duplicates other legislative requirements. No material changes currently proposed | 1.1.1 |
| 1.2 | Duration of the Licence | | |
| 1.3 | Powers not limited | | |
| 1.4 | Area of operations | | |
| 1.5 | Clause removed | | |
| 1.6 | End of Term Review | | |
| 1.7 | Licence amendment | | |
| 1.8 | Contravention of Licence | | |
| 1.9 | Cancellation of licence | | |
| 1.10 | Availability of Licence | | |
| 1.11 | Non-exclusive licence | | |
| 1.12 | Information provided to IPART under Licence | | |
| 2 | **SCA's responsibilities** | | |
| 2.1 | Responsibilities of the SCA under the licence and other Laws | Consider removing or rewording to the extent that the requirement duplicates other legislative requirements | 1.1.1 |
| 2.2 | Responsibility of the SCA under the Act | | |
| 2.3 | Memorandum of Understanding | No substantive amendment proposed | |
| 3 | **Raw Water quality** | | |
| 3.1 | Specific Water Characteristics | Consider removing requirements where they are incorporated into the full and proper implementation of the frameworks in ADWG (maintain requirement to maintain a framework in | 3.1 |
| 3.2 | Health Related Water Quality Characteristics | | |
| 3.3 | Clause Removed | | |

| Licence Clause | | Proposed amendment | Issues Paper reference (section) |
|---|---|---|---|
| 3.4 | Water supplied for Water Treatment | accordance with ADWG). Where appropriate, review wording and transfer material to proposed SCA Reporting Manual | 3.2 |
| 3.5 | Catchment and system management | | |
| 3.6 | Water quality monitoring and reporting | | |
| 3.7 | Water quality planning | | |
| 3.8 | Environmental water quality | | |
| 4 | **Catchment management and protection** | | |
| 4.1 | SCA to manage and protect Catchment Areas | Consider if the public reporting of catchment health is sufficient<br>Otherwise no substantive amendment proposed. | 4.3 |
| 4.2 | Plans of Management – Special Areas | | |
| 4.3 | Regional Environmental Plan | | |
| 4.4 | Clause removed | | |
| 4.5 | Provision of information | | |
| 5 | **The Environment** | | |
| 5.1 | Environmental Management | Replace requirements with EMS standard<br>Transfer indicator material to proposed SCA Reporting Manual | 3.1<br>3.2 |
| 5.2 | Environmental Indicators | | |
| 6 | **Management of Catchment Infrastructure Works and Water Conservation** | | |
| 6.1 | Management of Catchment Infrastructure Works | Consider amending to undertake best endeavours to meet requirements<br>Obligation to be reviewed at a later date if the governance arrangements and operating environment change.. | 4.1 |
| 6.2 | Water Supply System Yield | | |
| 6.3 | Review of the model | | |
| 6.4 | Water conservation | | |

| Licence Clause | | Proposed amendment | Issues Paper reference (section) |
|---|---|---|---|
| 7 | **Asset Management** | | |
| 7.1 | Asset Management obligation | Consider replacing with a requirement to develop an asset management framework<br>Review wording and transfer material to proposed SCA Reporting Manual | 3.1<br>3.2 |
| 7.2 | Reporting on the management system of the Assets | | |
| 7.3 | Auditing the management system of the Assets | | |
| 8 | **Customers** | | |
| 8.1 | Customers – Sydney Water Corporation | Reword requirements to reflect the small number of customers which SCA has, potentially reducing requirements on SCA | 4.4 |
| 8.2 | Customers – other than Sydney Water Corporation | | |
| 8.3 | Complaints | | |
| 8.4 | Consultation | | |
| 9 | **Pricing** | | |
| 9.1 | Sydney Water Corporation | Rearrange to place in Chapter 1 | 1.1.1 |
| 9.2 | Wingecarribee Shire Council and Shoalhaven City Council | | |
| 9.3 | Other customers | | |
| 10 | **Liability issues** | | |
| 10.1 | Contracting out | Consider removing or rewording to the extent that the requirement duplicates other legislative requirements | 1.1.1 |
| 10.2 | Damage and compensation to persons | | |
| 11 | **Annual Audit of the Licence** | | |
| 11.1 | Commission of audits | Consider removing the clauses which place obligations on IPART not SCA<br>Consider replacing with similar clauses to the clauses in the current Sydney Water Act | 1.1.1 |
| 11.2 | What the audit is to report on | | |
| 11.3 | Reporting of audit | | |
| 11.4 | Additional audits | | |

| Licence Clause | | Proposed amendment | Issues Paper reference (section) |
|---|---|---|---|
| 11.5 | Provision of information | | |
| Schedule 1 | **Area of Operations** | | |
| Schedule 2 | **Environmental Indicators** – see section 3.3 of the issues paper | | |

# B Issues requiring comment from stakeholders

## B.1 List of licensing issues for which IPART seeks comment from SCA and stakeholders

1 What is the level of support for the proposed adoption of a systems- or framework-standard approach to operational areas in the licence? If low, is there support for the existing provisions or an alternative approach or amendment? 40

2 What are the quantifiable and qualitative costs and/or benefits of the existing licence provisions? 40

3 What are the quantifiable and qualitative costs and/or benefits of the proposed adoption of systems- or framework-standard approach to operational areas in the licence? 40

4 Whether it is reasonable to reduce the scope of IPART's operating licence audits where suppliers are certified under third party arrangements such as ISO. 40

5 Are there alternative approaches or amendment(s) to the operating licence? If so, are there examples and quantifiable and qualitative costs and/or benefits of these alternatives? 40

6 If there is support for the proposed adoption of a systems- or framework-standard approach to operational areas in the licence, which infrastructure management approach (PAS 55 or Aquamark) would be supported? Are there other approaches we should be considering? 40

7 Are there any other considerations we have failed to take into account in proposing to adopt a systems- or framework-standard approach to operational areas in the licence? 40

8 What other issues and changes should we consider in identifying improvements to the structure of SCA's operating licence, to better meet the licensing objectives and principles? 43

9 Are the proposed reporting manual arrangements adequate to consolidate and coordinate reporting requirements under the operating licence? 43

## B.2 List of pricing issues for which IPART seeks comment from SCA and other stakeholders

### B.2.1 IPART seeks information and explanation from SCA on:

#### SCA's role and evolving regulatory framework

1 The risks or uncertainties in SCA's operating environment over the upcoming determination period and beyond, including the nature of these risks or uncertainties and the likelihood of these impacting on specific costs (for example, electricity charges). 30

2 How SCA has ascertained the appropriate service levels that it plans to provide over the upcoming determination period, and how these service levels relate to forecast costs. 30

#### Length of the determination period

3 Its preferred length for the determination period. 51

#### Determining the notional revenue requirement

4 SCA's capital expenditure over the current determination period, drivers of this expenditure, and service outcomes achieved. 53

5 SCA's capital expenditure over the current determination period compared to expenditure allowed by IPART when it set prices in the 2009 Price Determination, and an explanation of variances. 53

6 SCA's projected capital expenditure program over the upcoming determination period and beyond, drivers of this expenditure, and expected service outcomes to be achieved. 53

7 SCA's asset management practices and plan, and the relationship between its asset management framework and its capital expenditure program. 53

8 The value and timing of contributions (including contributed assets) to SCA from government and/or other sources. 53

9 SCA's operating expenditure over the current determination period, drivers of this expenditure, and service outcomes achieved. 53

10 SCA's operating expenditure over the current determination period compared to expenditure allowed by IPART when it set prices in 2009, and an explanation of variances. 53

11 SCA's projected operating expenditure over the upcoming determination period, including drivers of this expenditure, expected service outcomes, specific efficiency programs and the potential for efficiency gains. 53

12 SCA's proposed methodology for calculating depreciation and assessing asset lives, and the assumptions used to determine these. 53

### Output measures

13 SCA's performance against its output measures. 54

14 Projects or activities that SCA plans to undertake over the upcoming determination period and expected outputs or outcomes of these projects. 54

### Sales forecasts and the risks to revenue

15 SCA's forecast water sales, by customer, over the upcoming determination period, taking into account relevant impacts including those detailed above. 55

### Price structure

16 SCA's proposed prices (including pricing level and structure, and prices per customer) over the upcoming determination period, and the reasoning or justification behind these proposals. 56

### Have changes to SCA's operating environment increased its revenue risk?

17 The probability of it commencing transfers of water from Shoalhaven River. 63

18 Whether the Desalination Operating Rules increases revenue risks, and if so, its suggested mitigation tools. 63

19 The possible implications for the SCA of the price structure to be proposed by Sydney Desalination Plant Pty Ltd 63

20 The potential for imposing water restrictions and impacts on sales forecasts. 63

21 Sales forecasts to Sydney Water, including a breakdown of sales forecasts for supplying the North Richmond plant. 63

22 The costs associated with water supply for the North Richmond plant, and if they differ from the other water supplied to Sydney Water. 63

### How should we adjust SCA's prices to deal with risk?

23 The need and basis for including price adjustment mechanisms to address risks faced by SCA. 67

24 SCA's proposal for addressing revenue risks. 67

### Scarcity pricing

25 Its views on the introduction of wholesale scarcity pricing, the barriers to the implementation of a water market, and how it would work in practice. 73

### Foreshadowed capital expenditure

26 The systems, planning, approach, robustness of decision-making processes, prudence, efficiency, timing and prioritisation of different project phases to ensure optimal outcomes for customers and lumpiness minimised over the expenditure profile. 77

27 Configuration, resources and management systems of SCA and the extent to which these could be optimised having regard to effectiveness and efficiency. 77

28 Consideration of alternative options to achieve SCA's objectives and service delivery. 77

### Non-commercial activities and heritage assets

29 The size and significance of heritage-asset obligations and other non-commercial activities on operating and capital costs. 80

## B.1.1 IPART seeks comment from other stakeholders on:

### Length of the determination period

1 The length of the determination period that should apply to this review. 51

### Determining the notional revenue requirement

2 The prudence of SCA's capital expenditure over the current determination period. 53

3 SCA's projected capital expenditure program, including its expenditure drivers, scope for efficiency gains, and proposed service outcomes. 53

4 An appropriate rate of return to apply to the value of SCA's Regulatory Asset base (RAB), and the means of calculating/determining this rate. 53

5 The appropriate asset life to apply for calculating SCA's depreciation charge for the price determination (with reference, where necessary, to SCA's submission). 53

### Scarcity pricing



### Foreshadowed capital expenditure



### Non-commercial activities and heritage assets

# C Matters to be considered by IPART under section 15 of the IPART Act

In making determinations IPART is required, under section 15 (1) of the IPART Act, to have regard to the following matters (in addition to any other matters IPART considers relevant):

a) the cost of providing the services concerned

b) the protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standard of services

c) the appropriate rate of return on public sector assets, including appropriate payment of dividends to the Government for the benefit of the people of New South Wales

d) the effect on general price inflation over the medium term

e) the need for greater efficiency in the supply of services so as to reduce costs for the benefit of consumers and taxpayers

f) the need to maintain ecologically sustainable development (within the meaning of Section 6 of the *Protection of the Environment Administration Act 1991*) by appropriate pricing policies that take account of all the feasible options available to protect the environment

g) the impact on pricing policies of borrowing, capital and dividend requirements of the government agency concerned and, in particular, the impact of any need to renew or increase relevant assets

h) the impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body

i) the need to promote competition in the supply of the services concerned

j) considerations of demand management (including levels of demand) and least cost planning

k) the social impact of the determinations and recommendations

l) standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise).