

# **Review of prices for Sydney Desalination Plant Pty Limited's water supply services**

For the period to 30 June 2017

**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.

**Submissions are due by 22 July 2011.**

We would prefer to receive them by email <[ipart@ipart.nsw.gov.au](mailto:ipart@ipart.nsw.gov.au)>.

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

Sydney Desalination Plant Pty Limited price Determination 2011  
Independent Pricing and Regulatory Tribunal  
PO Box Q290  
QVB Post Office NSW 1230

Our normal practice is to make submissions publicly available on our website <[www.ipart.nsw.gov.au](http://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.



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## 1 Executive Summary

The Independent Pricing and Regulatory Tribunal of NSW is responsible for determining the maximum prices that various NSW government owned water agencies may charge for the provision of water, sewerage, stormwater and recycled water services. For residents of the Sydney, Blue Mountains and Illawarra regions these include the prices that they are charged for water supplied by the Sydney Water Corporation (Sydney Water).

Until recently, the majority of water Sydney Water supplied to its customers was sourced from bulk water purchased from the Sydney Catchment Authority (SCA). Since January 2010, Sydney Water has been able to purchase water from the Sydney Desalination Plant. The desalination plant is owned by a subsidiary of Sydney Water called Sydney Desalination Plant Pty Limited (SDP). For the first time, the NSW Government has asked us to determine the prices SDP can charge for its water and has provided Terms of Reference<sup>1</sup> to us for this purpose. We will determine prices for the period ending 30 June 2017.

Our process for determining prices for SDP commences with this Issues Paper. Its objective is two-fold. Firstly, to obtain information from SDP on issues that will assist us in determining SDP's prices. Information included in SDP's submission to IPART will be available to other stakeholders for comment.

Secondly, we seek comments from interested stakeholders on any issues relating to determining SDP's prices that they believe to be important. Stakeholders can attend a public hearing on 22 August 2011 to obtain further information on our review. We will consider all comments and the results of the public hearing before publishing our pricing determination and report on 28 October 2011.

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<sup>1</sup> The Terms of Reference can be found on our website: <http://www.ipart.nsw.gov.au>

## 2 Introduction

IPART undertakes various pricing and licence regulation functions for a range of NSW water businesses.

We regulate the prices Sydney Water can charge its customers for water and related services.

In the past, Sydney Water purchased the majority of its bulk water from SCA but it can now source water from the Sydney Desalination Plant. Sydney Water began constructing the plant in 2007 and the plant commenced operations in January 2010.<sup>2</sup> On 13 June 2007, Sydney Water established a wholly owned subsidiary called Sydney Desalination Plant Pty Limited (SDP) to own and operate the plant. SDP has contractual arrangements with the Blue Water Joint Venture to design and construct the desalination plant, and with Veolia Water Australia Pty Limited to operate and maintain the plant on behalf of SDP.<sup>3</sup>

On 9 August 2010, SDP was granted network operator and retail supplier licences in relation to the desalination plant.<sup>4</sup> The licences were granted in accordance with the provisions of the *Water Industry Competition Act 2006* (WICA). Under its network operator licence, the desalination plant is required to maximise water production when dam storage levels in Sydney are below a prescribed threshold.

On 6 May 2011 and under Section 51 of WICA, the Minister for Finance and Services, the Hon. Greg Pearce MLC, declared SDP a monopoly supplier in relation to the water supply services it provides under its network operator licence and retail supplier licence. He has asked IPART to determine prices for SDP.

The Government's request to determine charges for SDP stems from its belief that it is important for the community to see what the charges paid for water from the desalination plant are, and that they are determined independently.<sup>5</sup> In addition, such a pricing determination is also a precursor to the refinancing of the desalination plant by way of a lease or similar arrangement. SDP's prices need to be determined before any refinancing transaction can be completed. We are required to complete our review by 6 November 2011. However, we intend to publish our determination and report before that deadline on 28 October 2011.

In this review, we will determine the maximum charges for the period ending 30 June 2017 (upcoming determination period). In doing so, we will consider the functions needed to supply bulk desalinated water, and the appropriate level of revenue needed to support these activities in an efficient and effective manner.

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<sup>2</sup> 2010 Metropolitan Water Plan, pp 11 and 35.

<sup>3</sup> See Sydney Water website: [www.sydneywater.com.au](http://www.sydneywater.com.au)

<sup>4</sup> See Water Licensing section on our website: [www.ipart.nsw.gov.au/water/private-sector/licensing](http://www.ipart.nsw.gov.au/water/private-sector/licensing)

<sup>5</sup> Letter from the Minister for Finance and Services, the Hon. Greg Pearce MLC, 2 May 2011.

## 2.1 Impetus for the review

As indicated, we are undertaking this review at the request of the NSW Government. The request sets out Terms of Reference which require us to consider various pricing principles (see Appendix A for a copy of the Government's request and its Terms of Reference).

The Terms of Reference state that, the prices we determine are to reflect the following water supply services provided by SDP:

- a) the supply of non-rainfall dependant drinking water to purchasers, and
- b) the making available of the desalination plant to supply non-rainfall dependant drinking water.

The Terms of Reference require us to consider certain pricing principles including the following:

- ▼ The structure of prices should encourage SDP to be financially indifferent as to whether or not it supplies water. As such the structure of prices should comprise separate charges for the different water supply services described at a) and b) above.
- ▼ The charges for water supply services in b) above should be a periodic payment and should reflect fixed costs including: return on assets, return of assets, and the fixed component of operating costs. SDP is to be entitled to charge for providing the water supply services in b) above irrespective of levels of water in dam storages servicing Sydney or availability of water from other sources.
- ▼ The charges for water supply services in a) above should reflect all efficient costs that vary with output, including variable energy, labour costs, and maintenance costs.
- ▼ Any other matters that IPART may consider relevant.

These principles are significant in terms of specifying the information we require from SDP. They also offer very clear guidance on the structure of the charges we will determine but also allow us to consider other matters we may consider relevant.

## 2.2 Scope of the review

This review will be conducted under Part 3 of the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act).<sup>6</sup> Part 3 incorporates sections 11 through 24 of the IPART Act.

Under section 15 of the IPART Act,<sup>7</sup> we are to have regard to the following matters (in addition to any matters IPART considers relevant):

- ▼ 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 the supply of the services so as to reduce costs for the benefit of consumers and taxpayers
- ▼ the **need to maintain ecologically sustainable development** by appropriate pricing policies that take account of all the feasible options available to protect the environment
- ▼ 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 that the government agency concerned has entered into for 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 our determinations and recommendations
- ▼ the **quality, reliability and safety** of the services.

In considering these matters, we must balance the diverse needs and interests of stakeholders – such as ultimate consumer affordability and service quality – and ensure that SDP is adequately recompensed for the services it provides. We will also take into account the principles issued by the Council of Australian Governments (COAG) and contained in the National Water Initiative.<sup>8</sup>

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<sup>6</sup> If the Minister requests that IPART determines the pricing for any service in respect of which a monopoly supplier declaration is in force under WICA, Part 3 of the IPART Act applies: see Section 52(2) of WICA.

<sup>7</sup> The Section 15 requirements are listed in full in Appendix B.

<sup>8</sup> The National Water Initiative has built on the principles established in the 1994 COAG.

We will examine specific matters including:

- ▼ the efficiency of SDP's operating costs and the scope for further efficiency gains
- ▼ SDP's capital expenditure requirements and the outcomes that will be achieved by its proposed capital expenditure program
- ▼ SDP's regulatory requirements and any other government-imposed requirements
- ▼ the cost of the plant and associated works owned by SDP and the value of SDP's assets
- ▼ an appropriate rate of return for SDP
- ▼ forecast demand for water from SDP's desalination plant
- ▼ the structure and level of its water prices
- ▼ the implications of our pricing decisions, including the impact on SDP, its customers and, in turn, Sydney Water's customers in the community.

Concurrent with this review, we are reviewing our treatment of tax costs – we will release a separate discussion paper on this issue.<sup>9</sup>

### **2.3 The review process**

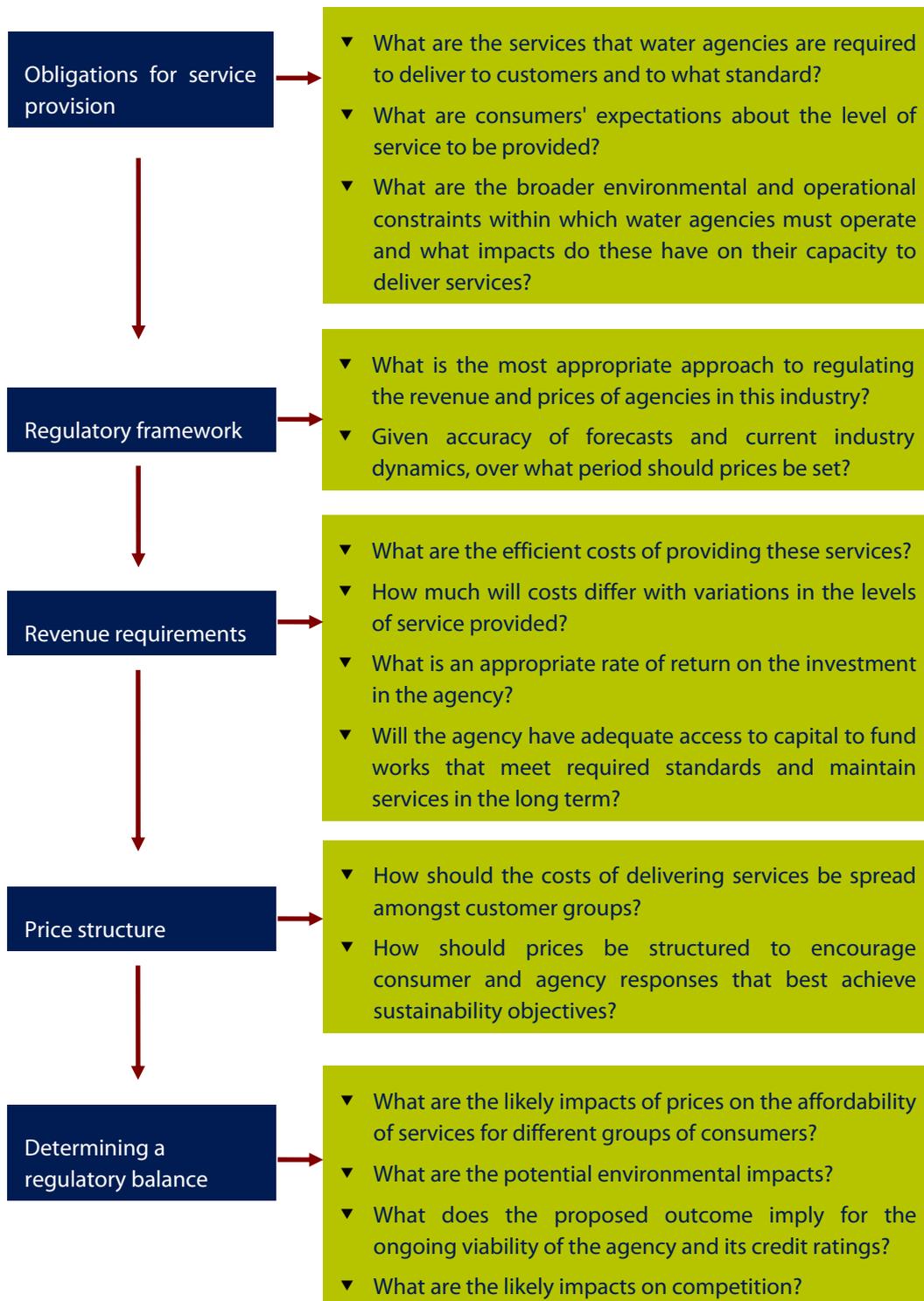
In undertaking this review, we will conduct our own research and analysis and engage consultants to undertake an investigation of SDP's capital and operating programs to determine whether they are optimal in terms of meeting the community's demands for desalinated water. The reports of our consultants will be published and our analysis will be included in our Report. We will publish all submissions except those containing confidential or commercially sensitive information.

IPART's general approach to determining monopoly prices for water agencies is set out in Figure 2.1 below. Note that the Terms of Reference prescribe how we should treat various issues concerned particularly in regard to the Regulatory Framework and Price Structure components.

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<sup>9</sup> Most other Australian regulators use a post-tax model and the estimated tax payments are based on actual tax paid or an effective tax rate. In principle, whether tax is allowed for in the WACC or as an expense does not affect the total revenues.

**Figure 2.1 IPART’s determination process**



We invite submissions to the review as part of our consultation process. Details on how stakeholders can make submissions are given at the front of this Paper (on the page preceding the Table of Contents). Stakeholders will have a further opportunity to receive information at a public hearing in August 2011.

This issues paper has been prepared to assist in identifying and understanding the key issues for the review, elicit stakeholder comment, and identify what information we require SDP to provide. We will consider the comments received from SDP and other stakeholders before making our final determination and publishing our final report.

An indicative review timetable is set out below.

**Table 2.1 Indicative review timetable**

<b>Task</b>	<b>Timeframe</b>
Release issues paper	Friday 24 June 2011
Receive submission from SDP	Friday 8 July 2011
Receive public submissions	Friday 22 July 2011
Public Hearing	Monday 22 August 2011
Release final report	Friday 28 October 2011

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

## **2.4 Purpose and structure of this Issues Paper**

To help stakeholders make submissions, this paper explains how the review will be undertaken, provides background information, and outlines issues on which we particularly seek comments. The remainder of this paper is structured as follows:

- ▼ Chapter 3 provides an overview of SDP’s role and regulatory framework.
- ▼ Chapter 4 outlines how we intend to determine prices and investigates particularly the length of the determination period, the costs that need to be recovered and the structure of the prices that we will determine.

## **2.5 List of issues on which we seek comment**

Throughout this paper, we have identified the issues on which we particularly seek stakeholder comment. Stakeholders may address some or all of these issues in their submissions, and are also free to raise and discuss any other issues they consider relevant to the review or which are set out in the Terms of Reference. For convenience, a full list of the information we require from SDP and the issues on which we seek stakeholder comments is provided below.

## Information requirements for SDP

### Regulatory framework

- |   |  |    |
|---|--|----|
| 1 | Information on all contracts relating to the desalination plant between:   | 13 |
|   | – SDP and the Blue Water Joint Venture   | 13 |
|   | – Sydney Water and the Blue Water Joint Venture  | 13 |
|   | – SDP and Veolia Water Australia Pty Limited   | 13 |
|   | – Sydney Water and Veolia Water Australia Pty Limited.   | 13 |
| 2 | Information on all contracts concerned with the purchase of renewable energy to operate the plant or the sale of renewable energy.   | 13 |
| 3 | Information on any contracts between SDP and Sydney Water.   | 13 |
| 4 | The details of any contracts to which SDP is party or which affect the commercial risk of its operations.  | 13 |
| 5 | An explanation in SDP's pricing submission of the major aspects of SDP's various contracts that may impact our price determination for the desalination plant.   | 14 |
| 6 | The risks or uncertainties in SDP's operating environment over the ongoing period and beyond, including the nature of these risks and uncertainties and the likelihood of these affecting specific costs (eg, energy costs). | 14 |

### Length of the determination

- |   |   |    |
|---|---|----|
| 7 | It's preferred starting date for the determination and its reasons for that preference. | 15 |
|---|---|----|

### Determining the costs to be recovered

- |    |  |    |
|----|--|----|
| 8  | The nature and level of its fixed costs not classified as allowance for return on assets, allowance for return of assets or fixed operating costs. | 16 |
| 9  | SDP's capital expenditure (in nominal terms), from 1 July 2007 to 30 June 2012 itemised by year.   | 17 |
| 10 | SDP's projected capital expenditure (in \$2011/12), from 1 July 2012 to 30 June 2017, itemised by year.  | 17 |
| 11 | Drivers of this projected expenditure and expected service outcomes to be achieved.  | 17 |
| 12 | A list of the assets owned by SDP and the cost of each asset (in nominal terms) itemised by year.  | 17 |

- 13 SDP's asset management practices and plans, and the relationship between its asset management framework and its capital expenditure program. 18

#### Rate of return

- 14 The likelihood and nature of a market for desalinated water emerging in the future and particularly over the next price path. 19
- 15 The current or proposed contractual arrangements for the management and operation of the plant and supply of water and the impact of these arrangements on the systematic risk for SDP. 19
- 16 The rate of return SDP is seeking, and the justification for this rate of return, taking into account the commercial risks inherent in its provision of services. 19
- 17 The values that should be assigned to the various parameters included in the WACC calculation. 19
- 18 What are the conditions that apply when SDP stops supplying water but is still able to recover all its fixed costs? Are there any performance standards or requirements that SDP must meet or penalties that it will incur when it is not supplying water but is still recovering its fixed costs? 19
- 19 What incentives, other than financial, are there for SDP to produce water? 19
- 20 What incentives, other than pricing, are there for SDP to produce water at different times, depending for example on the level of water in the SCA's dams? 19
- 21 What are the incentives to supply customers other than Sydney Water? 19

#### Depreciation

- 22 SDP's proposed approach to the treatment of depreciation of assets, including estimates of the assets' economic lives. 20
- 23 SDP's proposed depreciation allowance for assets for the period 1 July 2007 to 30 June 2012 (nominal terms); its proposed depreciation allowance for new assets over the upcoming period from 1 July 2012 to 30 June 2017 (in \$2011/12); the means of calculating the allowances; justification for this methodology and detail of the assumptions underpinning the calculations; the weighted average economic life of its new assets over the period 1 July 2012 to 30 June 2017. 20

## Fixed costs

- 24 The reasoning behind its identification of the fixed portion of its operating costs. 21
- 25 SDP's efficient fixed operating expenditure itemised on an annual basis from 1 July 2007 to 30 June 2012 (in nominal terms). Operating costs for this purpose are those operating costs that are incurred in the making available of the desalination plant to supply non-rainfall dependent drinking water and should reflect the fixed component of operating costs. 21
- 26 SDP's projected efficient fixed operating expenditure itemised on an annual basis over the period from 1 July 2012 to 30 June 2017 (in \$2011/12), including drivers of this expenditure, expected service outcomes, specific efficiency programs and the potential for efficiency gains. Operating costs for this purpose are those operating costs that will be incurred in the making available of the desalination plant to supply non-rainfall dependent drinking water and should reflect the fixed component of operating costs. 21

## Variable costs

- 27 The cost to produce a megalitre of desalinated water (in \$2011/12) for those efficient costs that vary with output. Costs for this purpose are those that are incurred in supplying non-rainfall dependent drinking water. 22
- 28 If applicable, the cost to produce a megalitre of desalinated water (in \$2011/12) for those efficient costs that vary with different production levels. Costs for this purpose are those that are incurred in supplying non-rainfall dependent drinking water. 22
- 29 An explanation of SDP's method of calculating the cost per megalitre of desalinated water including, but not limited to, information on inputs such as: 22
- The annual costs (in nominal terms) for the period 1 July 2007 to 30 June 2012 that vary with output itemised into categories including but not limited to variable energy, labour costs, maintenance costs and chemical costs. 22
  - The forecast annual costs (in \$2011/12) for the period 1 July 2012 to 30 June 2017 that vary with output itemised into categories including but not limited to variable energy, labour costs, maintenance costs and chemical costs. 22
  - The annual volumes of water used to calculate the value for the cost per megalitre of water for costs that vary with output, and an explanation of the methodology used to estimate those volumes. 22
- 30 The drivers of this forecast expenditure that varies with output, expected service outcomes, specific efficiency programs and the potential for efficiency gains. 22

## Green power

- |    |  |    |
|----|--|----|
| 31 | Whether SDP is seeking to recover the costs of using green power to operate the Sydney Desalination Plant.   | 23 |
| 32 | Estimates of the difference in cost between using green power and the cheapest available conventional source of power to operate the plant, given the plant's different levels of operation.                                   | 23 |
| 33 | In the future, if the price of green energy for the desalination plant becomes lower than the price of conventional energy, whether SDP can on-sell any excess green energy it purchases through its contractual arrangements? | 23 |

## Determining prices

- |    |  |    |
|----|--|----|
| 34 | Is SDP seeking determination of prices applicable to customers other than Sydney Water? If so, is SDP seeking the same prices for all its customers? Why?  | 24 |
| 35 | If there is potentially more than 1 customer, whether the fixed costs should be recovered from Sydney Water alone or from all customers?   | 24 |
| 36 | If there is potentially more than 1 customer and if the fixed costs are to be recovered from all customers, how the charges should be structured to achieve this and the rationale for this suggestion?        | 24 |
| 37 | If there is potentially more than 1 customer, who should pay for the fixed costs envisioned under the Terms of Reference if the desalination plant is not producing water for an extended period of time? Why? | 25 |

## We seek stakeholder comments on the following

### Determining the costs to be recovered

- |   |  |    |
|---|--|----|
| 1 | Stakeholder's views of SDP's fixed costs not classified as allowance for return on assets, allowance for return of assets or fixed operating costs.  | 16 |
| 2 | SDP's historic and projected capital expenditure program in relation to its efficiency and service outcomes, including its expenditure drivers, scope for efficiency gains and proposed service outcomes.                      | 18 |
| 3 | The rate of return that SDP should receive, taking into account the commercial risks inherent in its business, including the values that should be assigned to the various parameters included in the calculation of the WACC. | 19 |
| 4 | SDP's approach to the treatment of asset depreciation for the period 1 July 2012 to 30 June 2017 and the appropriate approach to this treatment.   | 20 |

5	The efficiency of SDP's projected fixed operating costs, as outlined in SDP's submission.	21
6	Whether SDP's categorisation of its operating costs, into those costs that reflect the fixed component of operating costs, is appropriate.	21
7	SDP's methodology for calculating its cost per megalitre of water for those costs that vary with output, and whether SDP's categorisation of its forecast costs into those costs that vary with output is appropriate.	22
8	The efficiency of SDP's output dependent costs, as outlined in SDP's submission.	22
9	Who should bear the difference in costs incurred due to the decision to operate the desalination plant using green power?	23

#### Determining prices

10	If there are to be multiple customers of the desalination plant's output, should each pay the same price and who should pay for recovering the fixed costs?	25
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## 3 SDP's role and regulatory framework

This chapter outlines SDP's role and the regulatory framework within which it operates.

### 3.1 SDP's role

SDP sells desalinated water to Sydney Water which in turn sells the potable standard water to residential and non-residential customers. SDP owns the desalination plant, the intake and outlet pipes at the Kurnell site and the 250 ML/day pumping station.<sup>10</sup> Because it can provide up to 15%<sup>11</sup> of Sydney's daily water needs, the desalination plant is critical in ensuring that Sydney residents have a reliable supply of drinking water.

Since 1991, inflows into Sydney's dam storage levels have suffered due to low rainfall, exceedingly variable rainfall patterns in the Sydney catchment, and the increasing size of Sydney's population which is forecast to keep growing in the coming years. In response to these pressures, the NSW Government instituted the Metropolitan Water Plan in 2004 (the Plan was updated in 2006 and 2010).

<sup>10</sup> Sydney Water submission to IPART for the 2007 Price determination, p 43.

<sup>11</sup> Sydney Water submission to IPART for the 2007 Price determination, p 41.

The Plan required Sydney Water to implement a number of major capital works, including constructing the desalination plant, which began operating in January 2010. The desalination plant increases the available water supply to Sydney but its main objective<sup>12</sup> is to produce water until dam levels reach relatively high levels. This produces a buffer of water in the dams that can be used during dry periods. Sydney Water believes this is the most effective utilisation of the plant because its capacity is not large enough in itself to reverse the effects of a severe drought after it has taken hold.

At present SDP has only 1 customer, Sydney Water. As a bulk water supplier to Sydney Water, SDP is in a similar position to the SCA. The SCA receives the majority of its revenue from Sydney Water for bulk water sold through a combination of fixed and volumetric charges.

SDP has a contractual arrangement with the Blue Water Joint Venture to design and construct the desalination plant, and with Veolia Water Australia Pty Limited to operate and maintain the plant.<sup>13</sup> SDP's payments to Veolia Water Australia Pty Limited for operating and maintaining the plant form the largest part of SDP's operating expenditure.

To aid our investigation we seek information on matters such as projected operating expenditure, capital expenditure and sales of water. We also seek details of the contractual matrix affecting SDP and its operations. The contracts to which SDP is party or which affect the commercial risk of its operations are relevant to the question of appropriate rate of return that should be allowed to SDP and to other aspects of efficient pricing. We are particularly interested in the details linked to pricing issues contained in the contracts between SDP and others that have implications for efficient pricing. These contracts are concerned with the operation and maintenance of the plant and the supply of renewable energy.

We seek information and explanation from SDP:

- 1 Information on all contracts relating to the desalination plant between:
  - SDP and the Blue Water Joint Venture
  - Sydney Water and the Blue Water Joint Venture
  - SDP and Veolia Water Australia Pty Limited
  - Sydney Water and Veolia Water Australia Pty Limited.
- 2 Information on all contracts concerned with the purchase of renewable energy to operate the plant or the sale of renewable energy.
- 3 Information on any contracts between SDP and Sydney Water.
- 4 The details of any contracts to which SDP is party or which affect the commercial risk of its operations.

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<sup>12</sup> Sydney Water, *Desalination Plant Operating Regime*, September 2010, p 1.

<sup>13</sup> Sydney Water, *An overview of Sydney's desalination plant contracts*, November 2009.

- 5 An explanation in SDP's pricing submission of the major aspects of SDP's various contracts that may impact our price determination for the desalination plant.

### 3.2 Regulatory framework

SDP operates under licences issued under WICA. SDP is regulated by a number of government agencies including the Office of Environment and Heritage and IPART.

SDP was declared a monopoly supplier under Section 51 of the WICA and IPART was given responsibility for regulating SDP's prices under Section 52 of the Act. Section 52 prescribes that IPART's pricing regulation is to be undertaken in line with the requirements of Part 3 of the IPART Act.

The licence granted to SDP under WICA is characterised by a range of obligations under the *Water Industry Competition (General) Regulation 2008* (the Regulation) that involve preparing and implementing of licensing plans relating to:

- ▼ water quality
- ▼ infrastructure operation
- ▼ retail supply management.

The Regulation requires the plans to be consistent with the Australian Drinking Water Guidelines and good asset management practice, amongst other specific requirements.

SDP must meet certain requirements of the licensing plans regarding the content of and compliance with the plans. These requirements are to be audited.

We ask that SDP inform us of any potential problems it foresees in complying with the requirements placed on it.

We seek information and explanation from SDP on:

- 6 The risks or uncertainties in SDP's operating environment over the ongoing period and beyond, including the nature of these risks and uncertainties and the likelihood of these affecting specific costs (eg, energy costs).

## 4 How we intend to determine prices

This chapter outlines our proposed approach to setting prices and poses a number of questions to gather information to assist us with that task. As part of this approach, we must consider the NSW Government's Terms of Reference.

Our approach for this review involves determining:

- ▼ the length of the period for which prices will apply
- ▼ the costs that need to be recovered to enable SDP to operate at a commercially acceptable level
- ▼ the prices that will enable SDP to recover those costs.

### 4.1 Length of determination

We usually determine the length of the determination period for our pricing reviews to suit the circumstances of that particular review. However, for this review, the Minister has given us Terms of Reference that directly address this issue. The Minister has a clear preference for the determination to cover the period to 30 June 2017.

We seek information and explanation from SDP on:

- 7 It's preferred starting date for the determination and its reasons for that preference.

### 4.2 Determining the costs to be recovered

The Terms of Reference will shape our approach to determining the costs that SDP needs to recover to operate at a commercially acceptable level. They require us to base the structure of the charges on:

- ▼ the costs that are fixed, including return on assets, return of assets, and the fixed component of operating costs, plus
- ▼ the costs that vary with output, including variable energy, labour costs, and maintenance costs.

To determine these components, we require detailed information on SDP's forecast operating expenditure, past and forecast capital expenditure, and the drivers of this expenditure. The proposed expenditure should provide for appropriate levels of service in terms of quality and performance.

As in other determinations, we will engage an independent consultant to review SDP's operating expenditure, asset management and capital expenditure. The review will assess the efficiency of operations and the prudence and effectiveness of expenditure programs, given SDP's objectives and functions. It will also examine the drivers of expenditure, the timing of proposed expenditure and general asset management practices. This analysis, combined with general consultancy experience, will allow the consultant to make recommendations on the efficiency and prudence of the expenditure program. The consultant will then prepare a report which we will make publicly available.

The following sections discuss the information we require to calculate fixed costs and costs that vary with output. There is also a discussion of the decision to use 'green power' electricity to run the desalination plant.

#### **4.2.1 Fixed costs**

To meet the requirements of the Terms of Reference, we will need to determine the efficient 'fixed' costs that SDP will incur in operating its business effectively and in attaining appropriate service standards. These costs are fixed because they are incurred irrespective of variations in output. That is:

...fixed costs including, return on assets, return of assets (depreciation), and the fixed component of operating costs.<sup>14</sup>

Generally, operating costs are associated with changes in output. The fixed component of operating costs refers to those operating costs that will be incurred even at times when the desalination plant is not producing treated water for sale, or which do not vary with changes in the volumes of water produced.

While the Terms of Reference list 3 categories of fixed costs, we also require SDP to provide details of any other fixed costs that lie outside of those categories.

We seek information and explanation from SDP on:

- 8 The nature and level of its fixed costs not classified as allowance for return on assets, allowance for return of assets or fixed operating costs.**

We seek comments from stakeholders on:

- 1 Stakeholder's views of SDP's fixed costs not classified as allowance for return on assets, allowance for return of assets or fixed operating costs.**

The following sections discuss the 3 categories of fixed costs identified in the Terms of Reference namely, the return on assets, the return of assets and the fixed component of operating costs.

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<sup>14</sup> NSW Government, *Terms of Reference*, p 1.

The calculations for the return on and of assets are dependent on the value of SDP's assets (also known as the asset base), and the value of the asset base is dependent on the level of capital expenditure undertaken by SDP. Consequently, we need information on SDP's capital expenditure before we can perform those return calculations.

### Capital expenditure

Capital expenditure refers to the expenditure incurred in replacing worn out assets or building new assets. Although not a direct component in price setting, capital expenditure increases the total value of the assets on which the return on and return of capital are calculated.

Capital expenditure incurred in a period is not normally recouped through prices in that period alone. Capital expenditure is often funded from borrowings or retained earnings and recovered over time through the prices of services. Consistent with good regulatory practice, IPART will look at the efficiency and prudence of SDP's capital expenditure before allowing it to be passed through to prices.

As part of the submission process, we seek details of actual and forecast capital expenditure information from SDP. This information should outline SDP's capital expenditure from 1 July 2007 to 30 June 2012, proposed capital expenditure for the period from 1 July 2012 to 30 June 2017, and expected outcomes of the forecast capital expenditure. We seek a list of the assets owned by SDP, including the capital expenditure on (ie, the cost of) each asset. SDP will also need to describe the implication of the proposed expenditures on its service quality and performance.

This information should be included in SDP's submission to IPART and will be made available to other stakeholders for comment when preparing their submissions.

We seek evidence in SDP's submission that SDP has well-developed and sound asset management practices and plans in place in accordance with the requirements of WICA,<sup>15</sup> and that capital expenditure programs are based on a robust asset management framework.

We seek information and explanation from SDP on:

- 9 SDP's capital expenditure (in nominal terms), from 1 July 2007 to 30 June 2012 itemised by year.
- 10 SDP's projected capital expenditure (in \$2011/12), from 1 July 2012 to 30 June 2017, itemised by year.
- 11 Drivers of this projected expenditure and expected service outcomes to be achieved.
- 12 A list of the assets owned by SDP and the cost of each asset (in nominal terms) itemised by year.

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<sup>15</sup> *Water Industry Competition (General) Regulation 2008*, Schedule 1, clause 6.

### 13 SDP's asset management practices and plans, and the relationship between its asset management framework and its capital expenditure program.

We seek comments from stakeholders on:

- 2 SDP's historic and projected capital expenditure program in relation to its efficiency and service outcomes, including its expenditure drivers, scope for efficiency gains and proposed service outcomes.

#### Return on capital and the risk and return trade-off

The Terms of Reference require us to adopt a rate of return for SDP that reflects the commercial risks faced by the asset owner in providing the services.

The existence of a risk-return trade-off is well-accepted, but it is important to distinguish between systematic risk (ie, risks related to general economy-wide trends) and non-systematic risk (ie, risks specific to that company). Equity owners are rewarded for holding systematic risk, which by definition cannot be diversified. However, in efficient capital markets investors are not rewarded for non-systematic risks as they can manage these risks through diversification of investments.

A common example of a systematic risk is the impact of the economic cycle on demand for water. Reductions in industrial activity during a downturn will be reflected in reduced demand for water as an input to these activities. In contrast, residential demand for water is less likely to be affected by economic cycles. Non-systematic risks can be quite varied. One risk may be regulatory risk, such as a change in environmental law that may affect costs. Another example is the impact of restrictions during drought periods on the demand for water.

It is generally accepted that water utilities have relatively low systematic risk because economic cycles have comparatively little impact on the demand for water. They also tend to have generally low levels of non-systematic risk because a large portion of their revenues comes from fixed charges.

However, the extent of systematic risk for SDP may be quite different from that for other water utilities we regulate. In the case of SDP, the Terms of Reference state we should structure prices so that they:

...should encourage SDP to be financially indifferent as to whether or not it supplies water.<sup>16</sup>

In other water determinations we make, charges were structured so the level of revenue that a water utility received was partially dependent on the volume of water it sold. That is, if actual water sales were less than those forecast when we determined prices, the revenue and hence the return received would be less than that forecast. Therefore, a risk to agencies' returns was created and we reflected this risk in the level of the WACC we applied. However, the Terms of Reference for this

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<sup>16</sup> NSW Government, *Terms of Reference*, p 1.

review reduce that risk because the revenue and hence return SDP will receive will be independent of water sales.

Water utilities costs are not wholly contracted in advance. While the linkage of prices to CPI protects the utilities from general inflation risk, they may be exposed to systematic risks due to relative trends in the prices of inputs. In contrast, SDP's systematic risks will also be reduced if its operation and management costs are wholly contracted and either reflected in prices for its output or separately passed through.

If SDP is to be financially indifferent as to whether or not it supplies water, we wish to understand what conditions apply when it is not supplying water. Does this mean there are no performance standards for SDP to meet when production has stopped? For example, does the plant have to be 'available' when it is not producing? Are there any penalties if the plant is not available when water supply is required?

We seek information and comment from SDP on:

- 14 The likelihood and nature of a market for desalinated water emerging in the future and particularly over the next price path.
- 15 The current or proposed contractual arrangements for the management and operation of the plant and supply of water and the impact of these arrangements on the systematic risk for SDP.
- 16 The rate of return SDP is seeking, and the justification for this rate of return, taking into account the commercial risks inherent in its provision of services.
- 17 The values that should be assigned to the various parameters included in the WACC calculation.
- 18 What are the conditions that apply when SDP stops supplying water but is still able to recover all its fixed costs? Are there any performance standards or requirements that SDP must meet or penalties that it will incur when it is not supplying water but is still recovering its fixed costs?
- 19 What incentives, other than financial, are there for SDP to produce water?
- 20 What incentives, other than pricing, are there for SDP to produce water at different times, depending for example on the level of water in the SCA's dams?
- 21 What are the incentives to supply customers other than Sydney Water?

We seek comments from stakeholders on:

- 3 The rate of return that SDP should receive, taking into account the commercial risks inherent in its business, including the values that should be assigned to the various parameters included in the calculation of the WACC.

## Return of capital

A water utility's infrastructure will wear out as it provides services to customers. The return of capital calculation (also known as depreciation) recognises the progressive using up of the service capacity of assets and progressively returns the value of this asset consumption to the business, allowing it to maintain the value of its capital intact.

To calculate the allowance for regulatory depreciation, we normally use the straight-line depreciation method. Under this method, the assets are depreciated by an equal amount in each year of their economic life, so their written-down value describes a straight line over time, from the initial value of the asset at the beginning of the period to zero at the end of the asset's life. We consider this method superior to alternatives in terms of simplicity, consistency and transparency.

In its submission, SDP will need to explain the methodology it proposes to use to calculate depreciation, and will need to provide an assessment of asset lives and the assumptions used to determine these. The Terms of Reference require the return of assets to reflect the assets' economic lives.

We seek information and comments from SDP on:

- 22 SDP's proposed approach to the treatment of depreciation of assets, including estimates of the assets' economic lives.
- 23 SDP's proposed depreciation allowance for assets for the period 1 July 2007 to 30 June 2012 (nominal terms); its proposed depreciation allowance for new assets over the upcoming period from 1 July 2012 to 30 June 2017 (in \$2011/12); the means of calculating the allowances; justification for this methodology and detail of the assumptions underpinning the calculations; the weighted average economic life of its new assets over the period 1 July 2012 to 30 June 2017.

We seek comments from stakeholders on:

- 4 SDP's approach to the treatment of asset depreciation for the period 1 July 2012 to 30 June 2017 and the appropriate approach to this treatment.

## Fixed operating expenditure

The Terms of Reference require us to consider setting charges according to the recovery of fixed costs which include the fixed component of operating costs. These are operating costs that do not vary with changes in the volumes of water produced.

We require SDP to provide details of the historic and forecast annual fixed operating costs that enable it to operate its business in a commercial manner. SDP should itemise the costs into appropriate categories.

We seek information and explanation from SDP on:

- 24 The reasoning behind its identification of the fixed portion of its operating costs.
- 25 SDP's efficient fixed operating expenditure itemised on an annual basis from 1 July 2007 to 30 June 2012 (in nominal terms). Operating costs for this purpose are those operating costs that are incurred in the making available of the desalination plant to supply non-rainfall dependent drinking water and should reflect the fixed component of operating costs.
- 26 SDP's projected efficient fixed operating expenditure itemised on an annual basis over the period from 1 July 2012 to 30 June 2017 (in \$2011/12), including drivers of this expenditure, expected service outcomes, specific efficiency programs and the potential for efficiency gains. Operating costs for this purpose are those operating costs that will be incurred in the making available of the desalination plant to supply non-rainfall dependent drinking water and should reflect the fixed component of operating costs.

We seek comments from stakeholders on:

- 5 The efficiency of SDP's projected fixed operating costs, as outlined in SDP's submission.
- 6 Whether SDP's categorisation of its operating costs, into those costs that reflect the fixed component of operating costs, is appropriate.

#### **4.2.2 Costs that vary with output**

The second category of costs we must consider under the Terms of Reference is those efficient costs that will vary with output. SDP will incur these costs when operating its business in a commercial manner and the prices we set will be calculated to allow SDP to recover those efficient costs. That is:

...all efficient costs that vary with output, including variable energy, labour costs, and maintenance costs.<sup>17</sup>

We require SDP to provide details of the cost of producing a megalitre of treated water. The costs involved in this calculation are efficient costs that vary with output. In order to analyse this value, we require information from SDP regarding its forecast annual costs that vary with output and its forecast annual sales of water in megalitres.

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<sup>17</sup> NSW Government, *Terms of Reference*, p 2.

Forecasting water sales can be difficult and requires significant analysis. This is due to the range of drivers that can impact on water demand, and the unpredictability or volatility of factors such as weather conditions and alternative water sources. Forecasting water sales for this review will also need to take into account the Operating Rules included in the NSW Government's Metropolitan Water Plan, SDP's WICA licence and unknowns regarding demand from customers other than Sydney Water. The Operating Rules and licence specify that the desalination plant will operate at full production capacity when the total dam storage level is below 70%, and will continue to operate until the level returns to 80%.

We seek information and explanation from SDP on:

- 27 The cost to produce a megalitre of desalinated water (in \$2011/12) for those efficient costs that vary with output. Costs for this purpose are those that are incurred in supplying non-rainfall dependent drinking water.
- 28 If applicable, the cost to produce a megalitre of desalinated water (in \$2011/12) for those efficient costs that vary with different production levels. Costs for this purpose are those that are incurred in supplying non-rainfall dependent drinking water.
- 29 An explanation of SDP's method of calculating the cost per megalitre of desalinated water including, but not limited to, information on inputs such as:
  - The annual costs (in nominal terms) for the period 1 July 2007 to 30 June 2012 that vary with output itemised into categories including but not limited to variable energy, labour costs, maintenance costs and chemical costs.
  - The forecast annual costs (in \$2011/12) for the period 1 July 2012 to 30 June 2017 that vary with output itemised into categories including but not limited to variable energy, labour costs, maintenance costs and chemical costs.
  - The annual volumes of water used to calculate the value for the cost per megalitre of water for costs that vary with output, and an explanation of the methodology used to estimate those volumes.
- 30 The drivers of this forecast expenditure that varies with output, expected service outcomes, specific efficiency programs and the potential for efficiency gains.

WE seek comments from stakeholders on:

- 7 SDP's methodology for calculating its cost per megalitre of water for those costs that vary with output, and whether SDP's categorisation of its forecast costs into those costs that vary with output is appropriate.
- 8 The efficiency of SDP's output dependent costs, as outlined in SDP's submission.

### 4.2.3 Green power

At the time of the 2008 Determination for Sydney Water, the NSW Government had announced the desalination plant would be entirely powered by renewable energy. Subsequently, Sydney Water has used green power to operate the desalination plant.

If SDP seeks to recover from its customers the additional costs of using green power, we will have to consider the ramifications of this proposal with regard to our obligations in section 15 of the IPART Act. In particular, we will consider who should bear the extra cost of using green power electricity rather than electricity purchased from conventional sources. For example, because the use of green power is a result of a Government decision, it could be argued that the Government should bear the additional costs (eg, as a Community Service Obligation) rather than end-user customers, but there are some issues that have to be considered.

When the development approval for the desalination plant was originally enacted, a condition of the approval was that the plant must be powered by green power. If SDP has no choice but to use green power there seems to be little justification for SDP to bear the difference in cost between green power and conventional power. However, if the mandated use of green power reflected government policy at the time, it is possible that any additional cost attributable to this policy decision should be borne by government (ie, taxpayers) rather than customers of SDP.

The supply of green power to the desalination plant is covered by long term contracts. Currently, the price for green energy is higher than for conventional energy but the price for conventional electricity is rising. Because the contractual arrangements for green power are set, there is a possibility that in the future the price of conventional energy may exceed the price of green energy under the green energy contracts for the desalination plant.

We are interested in hearing the views of stakeholders on this issue.

We seek information and comment from SDP on:

- 31 Whether SDP is seeking to recover the costs of using green power to operate the Sydney Desalination Plant.
- 32 Estimates of the difference in cost between using green power and the cheapest available conventional source of power to operate the plant, given the plant's different levels of operation.
- 33 In the future, if the price of green energy for the desalination plant becomes lower than the price of conventional energy, whether SDP can on-sell any excess green energy it purchases through its contractual arrangements?

We seek comments from stakeholders on:

- 9 Who should bear the difference in costs incurred due to the decision to operate the desalination plant using green power?

### 4.3 Determining prices

The Terms of Reference for this review require that the structure of prices should comprise separate charges:

- ▼ A charge in the form of a periodic payment for the making available of the desalination plant to supply non-rainfall dependent drinking water. The charge should reflect fixed costs.
- ▼ A charge for the supply of non-rainfall dependent drinking water that should reflect all efficient costs that vary with output.

We will consider the pricing structure required by the Terms of Reference as well as the requirements of section 15 of the IPART Act. Section 15 requires us to have regard to various matters including the impact on customers (see Appendix B for a list of items for which we must have regard when determining prices).

While the Terms of Reference provide direction for the structure of the charges and the costs to be recovered, they do not provide any detail on the potential customers that will be subject to the charges (SDP's retail supply licence allows it to sell water to any customer other than a 'Small Retail Customer').<sup>18</sup> If there are to be more customers than Sydney Water, the charging structure specified in the Terms of Reference creates some uncertainties.

If there is potentially more than 1 customer, how is the fixed charge component to be levied? For example, does Sydney Water pay the fixed charge and other customers pay the charge associated with output, or should the fixed costs be recovered from all customers based on the volume of water they take? Should all customers face the same charges?

We seek information and comment from SDP on:

- 34 Is SDP seeking determination of prices applicable to customers other than Sydney Water? If so, is SDP seeking the same prices for all its customers? Why?
- 35 If there is potentially more than 1 customer, whether the fixed costs should be recovered from Sydney Water alone or from all customers?
- 36 If there is potentially more than 1 customer and if the fixed costs are to be recovered from all customers, how the charges should be structured to achieve this and the rationale for this suggestion?

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<sup>18</sup> \*Under SDP's Retail Supply licence (Schedule A, Table 4): -Due to the access regime through WICA, there is potential for SDP to sell water to any appropriately sized customer.

\*Under SDP's Network Operator licence (Schedule A, clause A2 (b)): - There is no obligation to provide water to Sydney Water in particular when the plant is maximising production because the dams are low.

\*Under SDP's Network Operator licence (Schedule A, clause A2 (b)): - There is no obligation for SDP to stop producing water when the dams rise above 80%.

- 37 If there is potentially more than 1 customer, who should pay for the fixed costs envisioned under the Terms of Reference if the desalination plant is not producing water for an extended period of time? Why?

We seek comments from stakeholders on:

- 10 If there are to be multiple customers of the desalination plant's output, should each pay the same price and who should pay for recovering the fixed costs?





## **Appendices**



## A NSW Government Terms of Reference



**The Hon. Greg Pearce MLC**  
Minister for Finance and Services  
Minister for the Illawarra

2 May 2011

Mr Rod Sims  
Chairperson  
Independent Pricing and Regulatory Tribunal  
PO Box Q290  
QVB POST OFFICE NSW 1230



Dear Mr Sims

I write to advise you that I have signed an order declaring Sydney Desalination Plant Pty Ltd (SDP) to be a monopoly supplier, pursuant to section 51 of the Water Industry Competition Act 2006. The order will be published in the NSW Government Gazette in the near future, as required by the Water Industry Competition Act.

The order declares SDP to be a monopoly supplier, in a network operator and retail supplier capacity, for the purposes specified in SDP's Network Operator's Licence and Retail Supplier's Licence, and for distribution within the area of operations as specified in those Licences, and to specified persons or classes of persons as specified in SDP's Retail Supplier's Licence.

Pursuant to section 52 (1) (a) of the Water Industry Competition Act 2006, I write to request the Independent Pricing and Regulatory Tribunal (IPART) to determine the pricing for the declared monopoly services provided by SDP.

Pursuant to section 13 (1) (c) of the IPART Act, I require IPART to consider the matters set out in the attached terms of reference in reaching its determination.

It is important that the community can see what the charges paid for water from the desalination plant are, and that they are determined independently. This is also a precursor to a possible refinancing of the desalination plant by way of a lease or similar arrangement.

I specify under section 13 (1) (a) of the IPART Act, that IPART should complete its determination within 6 months of the date of Gazette of SDP as a monopoly supplier under section 51 of the Water Industry Competition Act 2006.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Greg Pearce'.

**Greg Pearce MLC**  
Minister for Finance and Services

## Terms of Reference for Referral of Sydney Desalination Plant Pty Ltd to IPART under Section 52 of the Water Industry Competition Act

### Background

On 29 June 2010 Sydney Desalination Plant Pty Ltd (SDP) was granted a network operator licence in relation to the *desalination plant*. The Minister for Finance and Services has, under section 51 of the Water Industry Competition Act 2006, declared that SDP is a monopoly supplier in relation to the *water supply services* it provides under its network operator licence.

SDP is the only supplier of non-rainfall dependant drinking water in New South Wales. Currently, the primary purchaser of drinking water supplied from the *desalination plant* is Sydney Water Corporation. Sydney Water Corporation purchases bulk water from two main sources, the Sydney Catchment Authority and, since its commissioning, the *desalination plant*.

The *desalination plant* is a key element in Sydney's water security plan. Under its network operator licence, the *desalination plant* is required to maximise water production when dam storage levels in Sydney are below a prescribed threshold. Prices set by the Independent Pricing and Regulatory Tribunal (IPART) should therefore reflect the water supply services provided by SDP set out below:

- (a) the supply of non-rainfall dependant drinking water to purchasers; and
- (b) the making available of the *desalination plant* to supply non-rainfall dependant drinking water.

### Matters for consideration - pricing principles

Each *price determination* is to be consistent with the following pricing principles:

1. Maximum prices should be set so that expected revenue generated will recover the efficient costs of providing the services described at (a) and (b) above over the life of the assets. Costs include operating costs, a return on the assets and return of assets (depreciation).
2. In calculating the return on invested assets:
  - i. The rate of return (or Weighted Average Cost of Capital) should reflect the commercial risks faced by the asset owner in providing the services.
  - ii. IPART should determine an appropriate opening asset value.
3. Return of assets (depreciation) is to reflect the economic lives of the assets.
4. The structure of prices should encourage SDP to be financially indifferent as to whether or not it supplies water. As such the structure of prices should comprise separate charges for the different water supply services described at (a) and (b) above.
5. The charges for water supply services in (b) above should be a periodic payment and should reflect fixed costs including, return on assets, return of assets, and the fixed component of operating costs. SDP is to be entitled to charge for providing the water supply services in (b) above irrespective of levels of water in dam storages servicing Sydney or availability of water from other sources.

6. The charges for water supply services in (a) above should reflect all efficient costs that vary with output, including variable energy, labour costs, and maintenance costs.
7. Any other matters that IPART may consider relevant.

**Timing**

The determination period is to cover the period to 30 June 2017.

For each successive price determination period, IPART is to make the price determination at least 6 months before the expiry of the current determination period.

## **B 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).