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15 July 2005

Dr Michael Keating, AC
Chairman
The Independent Pricing and Regulatory Tribunal of NSW
Level 2, 44 Market Street
PO Box Q290
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SYDNEY NSW 1230

Dear Dr Keating

Prices of Water Supply, Wastewater and Stormwater Services

Thank you for the opportunity to comment on the Tribunal's Draft Determinations and Draft Report on prices of water supply, wastewater and stormwater services for the period to 30 June 2009.

AGL's submission is attached. Please contact Chris Harvey on 9921 2601 if you wish to discuss the submission.

Your sincerely,

Robert Wiles
General Manager
Regulation and Policy

Submission in response to IPART Draft Determinations and Draft Report on Prices of Water Supply, Wastewater and Stormwater Services

This submission is made by The Australian Gas Light Company (AGL) in response to IPART's Draft Determinations and Draft Report on the prices of water supply, wastewater and stormwater services to be provided by Sydney Water Corporation, Hunter Water Corporation and Sydney Catchment Authority (SCA) over the period to 30 June 2009.

Summary:

AGL has previously made a submission in response to the Tribunal's Issues Paper published in connection with its investigation into water industry structures. In that submission, AGL noted that:

> "Structural changes [designed to provide for increased private sector participation] will be ineffective unless accompanied by appropriate commercial incentives and signals, both for investors and for consumers. The current price of water is significantly lower than the expected cost of water from the next tranche of capacity, either by way of bulk supply (desalination?), and/or reclamation and recycling technologies."

Pricing of potable water, at both the bulk supply and retail levels, will be a critical factor in determining the viability, and hence the extent, of private sector participation in the development of opportunities that exist for conservation, recycling and alternative sources of supply to address Sydney's medium and longer term water needs. This submission therefore focuses on the potable water prices and pricing structures proposed in the Draft Determinations rather than on the prices proposed for other services or the process by which each entity's notional revenue requirement has been determined.

The Government has identified increased water recycling as an integral part of its water strategy for Sydney over the next 25 years, with a target of 60GL per annum by 2020. The rationale for encouraging recycling is that it reduces the requirement for potable water where natural resources are finite. Reticulation of recycled water to residential consumers in established areas will not be economic in the foreseeable future, so growth in recycling to that sector will be determined by residential growth in new development areas. However, there are opportunities for recycling on a significant scale to non-residential users in established locations, provided there are appropriate economic incentives.

Increased private sector participation, particularly in recycling, is also a key Government objective. In AGL's submission, those objectives will be best achieved if transparent economic signals are provided wherever possible. While the Tier 2 residential tariffs proposed by the Tribunal should provide an adequate margin for reticulation of recycled water in new residential developments, the prices proposed for wholesale supply of raw water by SCA and for non-residential consumption of potable water are below the levels required to provide those signals.

Most recently, the Government has made announcements which confirm a commitment to desalination as the next major source of supply after accessing deep dam water and transfers from the Shoalhaven. This provides a firm basis for the Tribunal to act now to establish prices for raw water at the wholesale level and

potable water at the retail level that reflect the cost of desalination. The sooner appropriate price relativities are signalled to the market, the more likely it is that viable recycling projects (and perhaps other initiatives) will proceed, with the potential to defer the need for the desalination investment.

Pricing considerations:

The sustainable yield from conventional sources available to Sydney i.e. rivers and dams, is currently assessed to be about 600 GL per annum[1], subject to the level of environmental flows. Desalination of sea water has been identified as the source of the next large tranche of potable water after accessing deep dam water and transfers from the Shoalhaven. The cost of desalination water is currently estimated to be about $1.30/kL ex plant.

For residential consumers, the Tribunal proposes a marginal retail price for potable water of $1.44kL in 2005/06 increasing to $1.84/kL in 2008/09 ($ real). At these prices, reticulation of recycled water is likely to be viable in new land release areas. However, the cost of reticulating recycled water in established residential areas is likely to be prohibitively high for the foreseeable future. It follows that residential consumption of recycled water will be determined largely by the rate at which new land releases are developed and will do little to alleviate Sydney's supply problems in the short to medium term. The economics of bulk recycling projects are also less attractive where output grows over time from a low starting point.

The situation is somewhat different for the non-residential sector where large consumers are relatively concentrated geographically. Thus, while non-residential consumption is only about 30% of the total for Sydney, those consumers represent a sizeable potential market for recycled water which can be accessed relatively quickly, provided there are appropriate economic incentives. The economics of supplying a growing residential market can also be enhanced where a project has access to a non-residential base load from the outset.

To the extent that higher marginal prices for potable water can encourage conservation and/or accelerate investment in and uptake of recycling, the substantial investment required for desalination can be deferred. Recycling has the added benefits of contributing to resource sustainability by reducing overall net water consumption, and reducing volumes of effluent discharged at ocean outfalls. Desalination, on the other hand, leads to increased greenhouse gas emissions because of its high energy requirements. While emissions can be reduced by using green energy, that alternative increases operating costs.

The Tribunal's Draft Determinations:

The potable water tariffs proposed by the Tribunal for Sydney Water are:

- For residential consumers: 1.13/kL for the first 400kL per annum and $1.44/kL for all consumption in excess of 400kL for the period to 30 June 2006 increasing in real terms thereafter to $1.23/kL and $1.84/kL respectively in 2008/09.

- For non-residential consumers: $1.13/kL for all consumption for the period to 30 June 2006, increasing in real terms thereafter to $1.23/kL in 2008/09.

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[1] IPART, Investigation into Water and Wastewater Service Provision in the Greater Sydney Region, Issues Paper, May 2005, p3

The proposed cost of raw water supply to Sydney Water from the SCA is $0.15353/kL for the period to 30 June 2006, increasing in real terms to $0.19028/kL in 2008/09.

At these prices:

- Sydney Water will have no financial incentive to purchase recycled water (or desalination water for that matter) for so long as raw water is available from the SCA[2];
- it is unlikely that supply of recycled water to non-residential consumers will be viable unless uptake of recycled water is subsidised or mandated. This is especially so if the consumer must spend money to convert to using recycled water; and
- there is only a weak incentive for non-residential consumers to reduce consumption.

Proper price signals are important:

In a recent address to the Sydney Institute[3], Ken Henry, Secretary to the [Federal] Treasury, painted a picture where, faced with an aging population, improved allocative efficiency through continued microeconomic reform is essential to the maintenance of Australia's living standards. He went on to cite water, electricity and land transport as industries that are demonstrably not allocatively efficient and noted that:

> "… without appropriate price signals, quality investment decisions will not be made. And present price signals are far from appropriate. The risks of making large infrastructure investment decisions in such an information-poor environment are very great. Yet, if we undertake sensible reforms, delivering the right price signals and regulatory regimes that are not unnecessarily burdensome, the appropriate level of infrastructure spending will not be far behind. Indeed, with the right prices questions about infrastructure adequacy would be redundant."

A recent study commissioned by the Water Services Association of Australia examines pricing for recycled water in some depth and develops a number of "guiding principles" for pricing. One of the important research findings from the study, as summarised by WSAA[4], is:

> "Do not distort price signals:
>
> It is often argued that the price of recycled water should be deliberately set below the costs of providing the product. The argument often put forward to justify this position is a perception that price of potable water itself does not include costs such as the environmental damage of freshwater abstraction and that the provision of irrigation water is subsidised. The best response to any distortions in the pricing of either potable or irrigation water is to remove the original distortions rather than introduce other distortions in the

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2 In fact, to take supply from a high cost source when a lower cost source is available would appear to conflict with Sydney Water's statutory objectives "to be a successful business and, to this end:
(i) to operate at least as efficiently as any comparable businesses, and
(ii) to maximise the net worth of the State's investment in the Corporation … " (Sydney Water Act, s21)

3 Ken Henry, *The Task of Economic Policy,* Address to The Sydney Institute, Sydney, 20 June 2005

4 http://www.waterdirectorate.asn.au/news/documents/WSAAJournalMay2005.pdf

market for recycled water. Suppression of prices for potable, irrigation and recycled water will only encourage excess water consumption and send perverse signals to users of water and to those who could provide additional investment in alternative water supply provision and demand management options. These outcomes are inconsistent with the key objective of a more sustainable water resource management."

Finally, the NSW Government is a party to the Intergovernmental Agreement on a National Water Initiative, entered into in June 2004 and re-affirmed by CoAG in June 2005. That Agreement sets out principles and requires actions in relation to pricing which are relevant in the current context:

> **Urban Water Reform**
> **Outcome**
>
> 90. The Parties agree that the outcome for urban water reform is to:
> i) provide healthy, safe and reliable water supplies;
> ii) increase water use efficiency in domestic and commercial settings; iii) encourage the re-use and recycling of wastewater where cost effective;
> iv) facilitate water trading between and within the urban and rural sectors;
> v) encourage innovation in water supply sourcing, treatment, storage and discharge; and
> vi) achieve improved pricing for metropolitan water (consistent with paragraph 66.i) to 66.iv)).

and:

> 66. In particular, States and Territories agree to the following pricing actions:
>
> *Metropolitan*
> i) continued movement towards *upper bound pricing* by 2008;
> ii) development of pricing policies for recycled water and stormwater that are congruent with pricing policies for potable water, and stimulate efficient water use no matter what the source, by 2006;
> iii) review and development of pricing policies for trade wastes that encourage the most cost effective methods of treating industrial wastes, whether at the source or at downstream plants, by 2006; and
> …

All these observations support AGL's view that transparent economic signals should be provided wherever possible. In terms of water pricing, that would require that the marginal price for wholesale supply from SCA be at a level such that Sydney Water is indifferent between taking supply from SCA and the cost of supply from the next alternative source, and that the marginal retail price be pitched appropriately relative to that wholesale price.

Other considerations:

In a paper prepared for the Tribunal, the Centre for International Economics noted the arbitrariness of the current split between fixed and variable components in SCA's pricing and the need for change if Sydney Water's behaviour is to be influenced:

> "A higher *level* of wholesale charges will be readily justified on compliance grounds alone if proposed changes to environmental flows go ahead. SCA will need to make modifications to its dams to accommodate these. But under current pricing arrangements the wholesale price is purely a cost recovery vehicle with an arbitrary 50-50 reliance on fixed and variable charges to recover those costs. If there is a view that it should also be used as a regulatory mechanism to help implement a cap on extractions by influencing Sydney Water's behaviour, a different *structure* of charges will be needed."[5]

AGL notes that the Tribunal concluded subsequently[6] that a two tiered wholesale pricing structure would be inappropriate, for the time being at least. The Tribunal's principal concerns appear to have been that the Long Run Marginal Cost (LRMC) for SCA and the dynamics of the alternative supply market are uncertain, leading to a conclusion that a step pricing strategy would be risky and could promote inefficient actions and investment.

Since then, the Government has published the Sydney Metropolitan Water Plan (SMWP) in which the major infrastructure measures are identified as increased Shoalhaven transfers, accessing deep dam water, recycling and desalination. The SMWP also addresses environmental flow requirements which is another uncertainty identified by the Tribunal in its 2004 report.

Most recently the Government has made firm commitments towards planning for the installation of a desalination plant as the next source of supply after accessing deep dam water and transfers from the Shoalhaven. In its Draft Determinations the Tribunal notes, at page 21, that its final determinations could be reopened on the request of an agency, "in the event that there are material differences in costs associated with changes in [among other things], Government policy … such as a government direction to construct a desalination plant".

In AGL's view, the initiatives set out in the SMWP and recent developments in relation to desalination are sufficiently concrete to warrant the Tribunal acting now to establish prices for bulk supply of raw water from SCA, and retail tariffs for potable water that are properly reflective of the cost of desalinated water. The sooner appropriate price relativities are signalled to the market, the sooner it is that viable recycling projects (and perhaps other initiatives) will proceed with the potential to defer the need for the desalination investment.

Possible pricing solutions:

The preferred means of ensuring uptake of recycled water would be to establish tariffs at both the bulk supply and retail level which provide transparent economic signals to substitute recycled water for potable water and/or reduce demand. This could be achieved by implementing an inclining block structure for bulk supply from

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5 CIE, Water price restructuring and the role of Sydney's wholesale water price, April 2004.

6 IPART, *Investigation into Price Structures to Reduce the Demand for Water in the Sydney Basin*, Final Report, July 2004

the SCA to Sydney Water and for retail tariffs to all consumers, including non-residential. In simple terms this would require that the following relationships be satisfied at the margin:

For Bulk Supply:

The cost of bulk supply from SCA to Sydney Water on the margin should be set by reference to the price of the alternative source of bulk supply which is desalinated water i.e.:

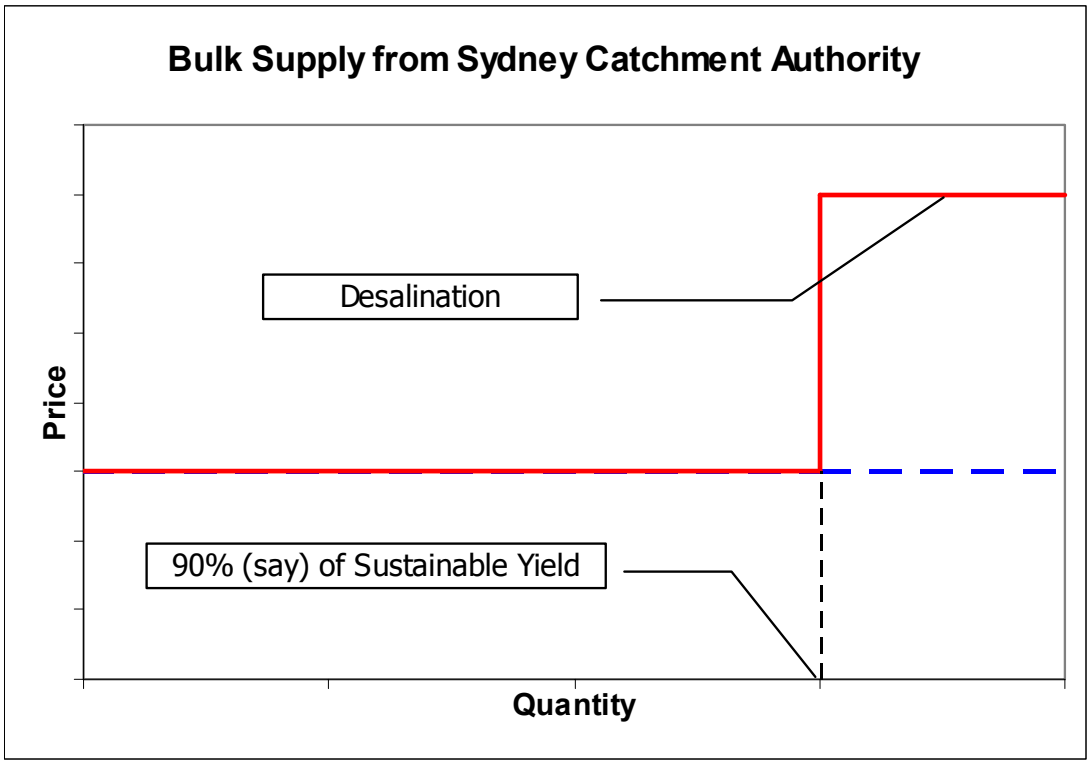
$$S + T \geq D \quad \text{or} \quad S \geq D - T$$

where:

- S = Cost (to Sydney Water) of bulk supply from Sydney Catchment Authority
- T = Cost (to Sydney Water) of treating raw water
- D = Cost (to Sydney Water) of desalinated water delivered to the distribution network

For the SCA the size of the first, lower priced, block could be linked to the sustainable yield from current sources. Initially the size could be something less than 100% of that yield recognising the need to re-build storage levels. The charge for volumes in excess of the first block would be set so that Sydney Water would be at least neutral between the cost of water from the SCA and the cost from desalination. The first block tariff and fixed charges would then be set by reference to SCA's revenue requirement.

This is illustrated in the following diagram:



Retail Tariff:

At the retail level, the potable water tariff on the margin should be set by reference to the price of desalinated water. Recycled water will be competitive where the delivered price, plus the consumer's conversion cost, is less than or equal to the potable water tariff i.e.:

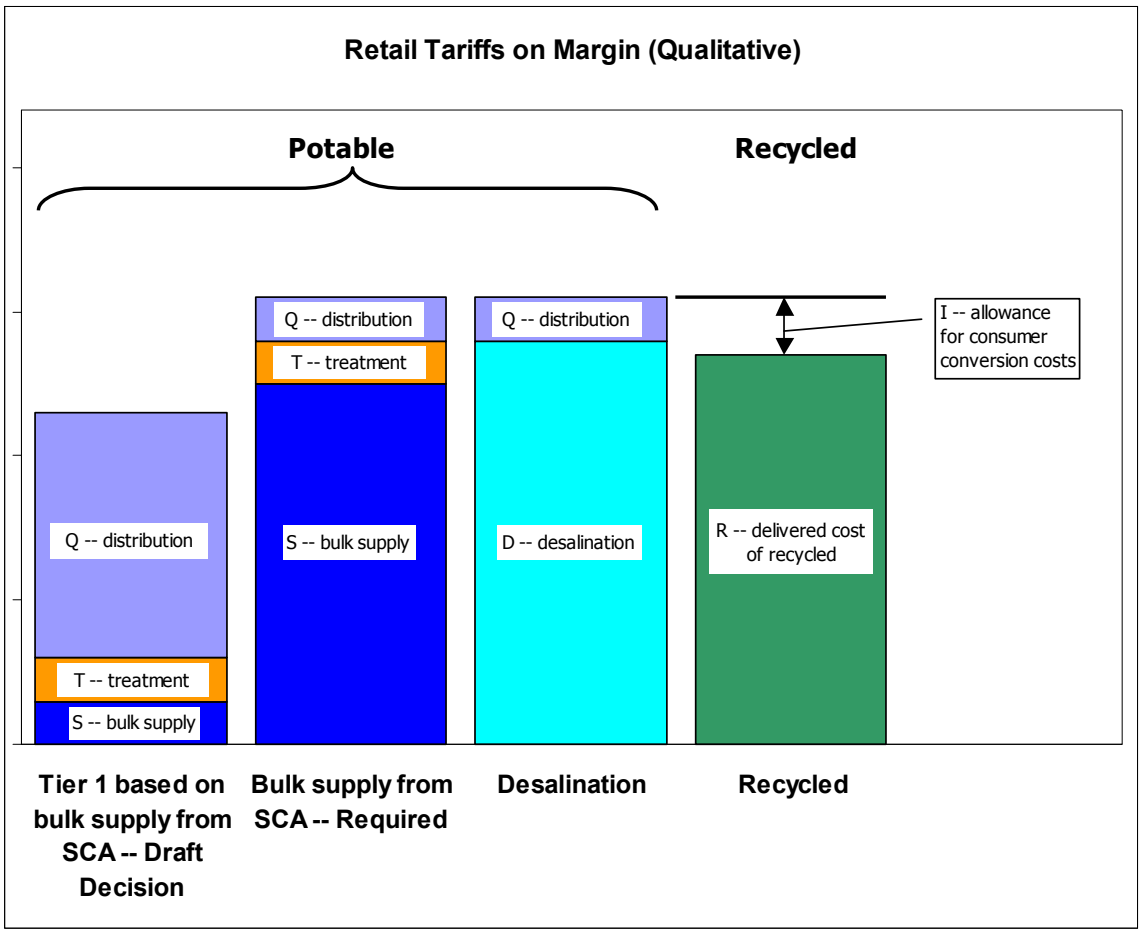
$$\text{Retail Tariff} = S + T + Q \ (\geq D + Q) \geq R + I$$

where:

- Q = Cost (to Sydney Water) of distributing potable water
- R = Delivered cost (to the consumer) of bulk recycled water
- I = Allowance for consumer conversion costs

It is acknowledged that more sophisticated representations are possible for both of the relationships described above. For example, additional categories of cost and issues of cost sharing can be considered as discussed in WSAA, *Pricing for Recycled Water, Occasional Paper No. 12*, February 2005. The level of sophistication necessary will depend on the precision required which will, in turn, be a function of the length of time a decision is to apply before it is reviewed. Ultimately the degree of sophistication that is feasible will be determined by the quality of information available to support the analysis.

The requirements described above for bulk supply pricing and retail tariffs are illustrated together in the following diagram:



On current assessments, the Tier 2 residential tariffs proposed by the Tribunal should provide an adequate margin for reticulation of recycled water in new residential developments. As noted previously, at the proposed (Tier 1) tariff for potable water, supply of recycled water to non-residential consumers is unlikely to be viable unless uptake of recycled water is subsidised or mandated.

In the case of non-residential consumers, the SMWP foreshadows water efficiency measures as follows:

> "A new program will be introduced to drive water efficiencies in Sydney's businesses. Identified commercial and industrial businesses will be required to prepare water conservation plans by March 2006 and to implement cost effective measures to improve water efficiency by September 2007.
>
> Initially the program will target the top 200 water-using businesses in the Sydney metropolitan area where large volumes of water savings are likely, and if successful, may be rolled out to other businesses over time. It is estimated that an average of 20% water savings can be made using this approach." (p16)

An inclining block structure and/or higher tariffs generally for non-residential use would be entirely consistent with these initiatives. However, if an inclining block tariff were adopted there would need to be some variation in the size of the first, lower priced, block to accommodate the variable sizes of businesses and their different water requirements. One solution could be to set the size of the first block for each consumer as a percentage of total consumption for the prior year. The percentage could be the same for all consumers in the first instance. The charge for consumption in excess of the first block would be the Tier 2 tariff for residential consumption in excess of 400kL per annum. The Tier 1 tariff (the same for both residential and non-residential) and fixed charges would then be set by reference to Sydney Water's revenue requirement.

An inclining block structure would provide clear signals to conserve and/or take up recycled water on the margin. However, at the proposed Tier 1 tariff and anticipated costs of recycled water, there would be no economic incentive for consumers to substitute recycled water for the Tier 1 volume, even where substitution was technically feasible. Rebates, subsidies, or other mechanisms would be required to support substitution beyond the consumer's Tier 2 volume.

An alternative to inclining tariffs would be to apply the Tier 2 tariff to all non-residential consumption thereby providing an economic incentive to conserve and/or substitute wherever technically feasible. The increase in variable charges could be off-set by some reduction in fixed charges, although that may be unnecessary given that water is generally not a high proportion of total input cost for non-residential consumers. Depending on the extent of substitution, it may also be necessary to compensate Sydney Water for any consequent reduction in distribution revenue derived from potable water.

Conclusion:

Opportunities exist for recycling to non-residential consumers on a significant scale. Those opportunities can be realised relatively quickly to help alleviate Sydney's supply problems and perhaps defer the need to invest in more costly options such as desalination. However, in the absence of mandated controls, recycling will be viable only if there are appropriate economic signals through prices. On current assessments, the Tribunal's pricing proposals for bulk supply of raw water from SCA, and for retail supply to non-residential consumers, will require some modification if recycling to supply those consumers is to be viable.

The Australian Gas Light Company, July 2005